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(54) Title: TISSUE SPECIFIC GENES OF DIAGNOSTIC IMPORT

(57) Abstract: The present invention relates to a composition comprising a plurality of polynucleotides which are cell and/or tissue specific and which may be used in their entirety or in part as references in producing an expression profile that defines a metabolic or developmental process, treatment, condition, disease, or disorder.

WO 01/32927 A2

## TISSUE SPECIFIC GENES OF DIAGNOSTIC IMPORT

### TECHNICAL FIELD

The present invention relates to a composition comprising a plurality of polynucleotides which  
5 are cell and/or tissue specific. These polynucleotides may be used to define and direct a metabolic or  
developmental process, to identify or to monitor the progression of a condition, disease, or disorder, or  
to evaluate and monitor the efficacy of a treatment protocol.

### BACKGROUND ART

Array technology can provide a simple way to explore the expression of a single polymorphic  
10 gene or the expression profile of a large number of related or unrelated genes. When the expression of  
a single gene is examined, arrays are employed to detect the expression of a specific gene or its  
variants. When an expression profile is examined, arrays provide a platform for examining which  
genes are tissue specific, direct the differentiation of a cell type or tissue, carry out housekeeping  
functions, function as parts of a signaling cascade, or characterize a particular genetic predisposition,  
15 condition, disease, or disorder.

The application of gene expression profiling is particularly relevant to improving diagnosis and  
prognosis of disease. However, in order to determine whether expression of a particular gene in a  
particular disease is significant, it is useful to provide a reference set of tissue and cell specific genes  
against which genes expressed during the disease process may be compared. For example, both the  
20 levels and sequences expressed in brain tumors may be compared with the levels and sequences  
expressed in normal brain tissue. These comparisons may be made on a single array by incorporating a  
particular tissue or cell specific reference set alongside novel sequences or on multiple arrays, each of  
which contains at least some subset of the known reference set.

The present invention satisfies a need in the art in that it provides such a reference set. The  
25 reference set may be used in its entirety or in part to produce an expression profile that may be used to  
define and direct a metabolic or developmental process, to identify or to monitor the progression of a  
condition, disease, or disorder, or to evaluate and monitor the efficacy of a treatment protocol.

### SUMMARY

The present invention provides a plurality of tissue or cell specific polynucleotides which may  
30 be used on an array to produce an expression profile. This profile may define expression of the  
polynucleotides in normal tissue, during a particular metabolic or developmental process or during the  
onset, progression, or treatment of a human condition, disease, or disorder. In one embodiment, these  
polynucleotides are selected from SEQ ID NOs:1-416.

The invention also provides a plurality of polynucleotides which display tissue or cell specific

expression and are selected from: a) SEQ ID NOs:209-218 and 1-10, cell specific polynucleotides of heart and fragments thereof; b) SEQ ID NOs:219-249 and 11-41, cell specific polynucleotides of skeletal muscle and fragments thereof; c) SEQ ID NOs:250-251 and 42-43, cell specific polynucleotides of uterus and fragments thereof; d) SEQ ID NOs:252-256 and 44-48, cell specific polynucleotides of ovary and fragments thereof; e) SEQ ID NOs:257-263 and 49-55, cell specific polynucleotides of stomach and fragments thereof; f) SEQ ID NOs:264-283 and 56-75, cell specific polynucleotides of intestine and fragments thereof; g) SEQ ID NOs:284-293 and 76-85, cell specific polynucleotides of lung and fragments thereof; h) SEQ ID NOs:294-345 and 86-137, cell specific polynucleotides of liver and fragments thereof; i) SEQ ID NOs:346-356 and 138-148, cell specific polynucleotides of kidney and fragments thereof; j) SEQ ID NOs:357-374 and 149-166, cell specific polynucleotides of pancreas and fragments thereof; and k) SEQ ID NOs:375-416 and 167-208, cell specific polynucleotides of brain and fragments thereof. In one aspect, the plurality of polynucleotides are immobilized on a substrate.

In another embodiment, the expression of a plurality of polynucleotides is used to detect expression in a tissue. In one aspect, the tissue is embryonic stem cells which are differentiating into brain, heart, kidney, liver, lung, muscle or pancreatic tissues. In a second aspect, the tissue is a biopsy from diseased brain, heart, kidney, liver, lung, muscle, ovarian, pancreatic, small intestine, stomach, or uterine tissues which is being diagnosed for a cancer or immune or inflammatory disease or subjected to forensic analysis. In a third aspect, the point of origin of a metastatic cancer is determined.

In another embodiment, the polynucleotides are used in high throughput methods of screening molecules or compounds to identify a ligand, the method comprising combining a polynucleotide with molecules or compounds under conditions to allow specific binding and detecting specific binding, thereby identifying a ligand which specifically binds to the polynucleotide. The molecules or compounds to be screened are selected from DNA molecules, RNA molecules, PNAs, mimetics, peptides, and proteins.

In another embodiment, the invention provides a substantially purified polynucleotide selected from SEQ ID NOs:212, 228, 233, 259, 271, 287, 316-319, 324, 370, 379, 380, 383, 410, and 412 or a fragment thereof, SEQ ID NO:4, 20, 25, 51, 63, 79, 108-111, 116, 162, 171, 172, 175, 202, and 204. In one aspect, the polynucleotide selected from SEQ ID NOs:212, 228, 233, 259, 271, 287, 316-319, 324, 370, 379, 380, 383, 410, and 412 or a fragment thereof, SEQ ID NO:4, 20, 25, 51, 63, 79, 108-111, 116, 162, 171, 172, 175, 202, and 204 is used in an expression vector transformed into a host cell to produce a protein or a portion thereof by culturing the host cell under conditions for the expression of protein and recovering the protein from the host cell culture.

In a third embodiment, the invention provides a protein or a portion thereof. In one aspect, the protein is used in a high throughput method to screen large numbers of molecules or compounds to

identify at least one ligand which specifically binds the protein, the method comprising combining the protein with the molecules or compounds under conditions to allow specific binding and detecting specific binding, thereby identifying a ligand which specifically binds the protein. In a second aspect, the protein is used to purify a ligand, the method comprising combining the protein with a sample under  
 5 conditions to allow specific binding, recovering the bound protein, and separating the protein from the ligand, thereby obtaining purified ligand. The molecules or compounds screened or purified may be selected from DNA molecules, RNA molecules, PNAs, mimetics, peptides, proteins, agonists, antagonists, antibodies or their fragments, immunoglobulins, inhibitors, drug compounds, and pharmaceutical agents. Any of these molecules or compounds may have diagnostic or therapeutic  
 10 applications.

### DESCRIPTION OF THE SEQUENCE LISTING AND TABLES

A portion of the disclosure of this patent document contains material that is subject to copyright protection. The copyright owner has no objection to the facsimile reproduction by anyone of the patent document or the patent disclosure, as it appears in the Patent and Trademark Office patent  
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The Sequence Listing is a compilation of polynucleotides obtained by sequencing and extension of clone inserts of different cDNAs. Each sequence is identified by a sequence identification number (SEQ ID NO or SEQ ID) and by the clone number (Incyte ID) from which it was obtained.

Table 1 lists the fragments and extended polynucleotides by their SEQ ID NO and cDNA  
 20 respectively, tissue, and by the description associated with at least a fragment of a homologous polynucleotide in GenBank. The descriptions were obtained using the sequences of the Sequence Listing and BLAST analysis.

Table 2 lists the source of the RNAs used to produce target polynucleotides for hybridization to the UNIGEM V microarray (Incyte Genomics, Palo Alto CA). The columns present the Source No,  
 25 Tissue, Age, Ethnicity/Sex, Cause of Death, and Conditions or Diseases, as known for each donor.

Table 3 shows the data for each of the clones across each of the tissues used in the experiments. The columns present Clone ID and the tissues (with source number)—heart, skeletal muscle, uterus, stomach, small intestine, lung, liver, kidney, pancreas, spleen and brain. This data was produced using GEMTOOLS software (Incyte Genomics).

30 Table 4 presents the analysis of variance (ANOVA) for the data. The columns present Clone ID, Var. Betw (variance between), Var. Within (variance within), F (value), and Probability. These values were produced using batch ANOVA (Sokal and Rohlf (1969) Biometry: the Principles and Practice of Statistics in Biological Research, WH Freeman, San Francisco CA) and EXCEL98 software (Microsoft, Seattle WA).

35 Table 5 shows the cell and tissue specificity of the polynucleotides across tissues (heart,

skeletal muscle, uterus, stomach, small intestine, lung, liver, kidney, pancreas, spleen and brain). The cell and tissue specific groupings were produced using mean values [mean (tissue)- mean (entire set)] and grouped using EXCEL98 software (Microsoft).

## DESCRIPTION OF THE INVENTION

### 5 Definitions

The term "array" refers to an ordered arrangement of hybridizable polynucleotides. These are arranged so that there are a "plurality" of polynucleotides, preferably at least one polynucleotide, preferably at least 100 polynucleotides, and more preferably at least 1,000 polynucleotides, and even more preferably at least 10,000 polynucleotides on a 1 cm<sup>2</sup> substrate. The maximum number of  
10 polynucleotides is unlimited, but is at least 100,000. Furthermore, the signal from each of the hybridized polynucleotides is individually distinguishable.

A "polynucleotide" refers to a chain of nucleotides. Preferably, the chain has from about 15 to 10,000 nucleotides and more preferably from about 400 to 6,000 nucleotides. The term "probe" refers to a probe polynucleotide capable of hybridizing with a target polynucleotide to form a hybridization  
15 complex. In most instances, the sequences of the probe and target polynucleotides will be complementary (no mismatches) when aligned. In some instances, there may be up to a 10% mismatch.

"Fragment" refers to any part of an Incyte clone or polynucleotide which retains a useful characteristic. Useful fragments may be used in hybridization technologies, to identify or purify ligands, or as a therapeutic to regulate replication, transcription or translation.

20 "Ligand" refers to any agent, molecule, or compound which will bind specifically to a complementary site on a polynucleotide or protein. Such ligands stabilize or modulate the activity of polynucleotides or proteins and may be composed of at least one of the following: inorganic and organic substances including nucleic acids, proteins, carbohydrates, fats, and lipids.

"Purified" refers to any molecule or compound that is removed, isolated, or separated from its  
25 natural environment and is at least about 60% free, and more preferably about 90% free, from other components with which it is naturally associated.

"Specific binding" refers to a special and precise interaction between two molecules which is dependent upon a particular structure such as molecular side groups. For example, the hydrogen bonding between two single stranded nucleic acids or the binding between an epitope or a protein and  
30 an agonist, antagonist, or antibody.

"Sample" is used in its broadest sense. A sample containing polynucleotides may comprise a bodily fluid; an extract from a cell, chromosome, organelle, or membrane isolated from a cell; genomic DNA, RNA, or cDNA in solution or bound to a substrate; a cell; a tissue; a tissue print; a finger print, a hair, and the like.

35 "Portion" refers to any part of a protein used for any purpose, but especially for the screening

of molecules or compounds to identify those which specifically bind to that portion and for producing antibodies.

The phrase "polynucleotide encoding a protein" refers to nucleic acid sequence that closely aligns with a sequence which encodes a conserved protein motif or domain that were identified by  
 5 employing analyses well known in the art. These analyses include Hidden Markov Models (HMMs) such as PFAM (Krogh (1994) J Mol Biol 235:1501-1531; Sonnhammer et al. (1988) Nucl Acids Res 26:320-322), BLAST (Basic Local Alignment Search Tool; Altschul (1993) J Mol Evol 36: 290-300; and Altschul et al. (1990) J Mol Biol 215:403-410), or other analytical tools such as BLIMPS (Henikoff et al. (1998) Nucl Acids Res 26:309-12). Additionally, "polynucleotide encoding a protein"  
 10 may refer to a polynucleotide that is expressed in or associated with specific human metabolic processes, conditions, disorders, or diseases.

"Cell specific", as defined herein, refers to those polynucleotides which occur at a statistically significant level in more than one tissue. The commonality between the tissues may be ascribed to the types of cells that are an integral part of or would be expected to be found in a particular tissue, e.g.,  
 15 blood cells, nerve cells, endothelial cells, and the like.

#### **The Invention**

The present invention provides a plurality of tissue or cell specific polynucleotides which may be used on an array to produce an expression profile. This profile may define expression of these polynucleotides in normal tissue, during a particular metabolic or developmental process or during the  
 20 onset, progression, or treatment of a human condition, disease, or disorder. These polynucleotides represent known and novel genes normally expressed in the cells or tissues of the brain, heart, intestine, kidney, liver, lung, smooth muscle, ovary, pancreas, spleen, stomach, or uterus. The expression of these polynucleotides may be compared to the expression of other known or novel genes found on an array. The plurality of polynucleotides, the entire reference set, comprises SEQ ID NOs:1-416. Tissue  
 25 or cell-specific reference sets may be selected from SEQ ID NOs:209-218 and 1-10, cell specific polynucleotides of heart and fragments thereof; b) SEQ ID NOs:219-249 and 11-41, cell specific polynucleotides of skeletal muscle and fragments thereof; c) SEQ ID NOs:250-251 and 42-43, cell specific polynucleotides of uterus and fragments thereof; d) SEQ ID NOs:252-256 and 44-48, cell specific polynucleotides of ovary and fragments thereof; e) SEQ ID NOs:257-263 and 49-55, cell  
 30 specific polynucleotides of stomach and fragments thereof; f) SEQ ID NOs:264-283 and 56-75, cell specific polynucleotides of intestine and fragments thereof; g) SEQ ID NOs:284-293 and 76-85, cell specific polynucleotides of lung and fragments thereof; h) SEQ ID NOs:294-345 and 86-137, cell specific polynucleotides of liver and fragments thereof; i) SEQ ID NOs:346-356 and 138-148, cell specific polynucleotides of kidney and fragments thereof; j) SEQ ID NOs:357-374 and 149-166, cell  
 35 specific polynucleotides of pancreas and fragments thereof; and k) SEQ ID NOs:375-416 and 167-208,

cell specific polynucleotides of brain and fragments thereof. The plurality of polynucleotides is arrayed on a substrate, preferably a microarray or used as probes.

The invention also provides a substantially purified polynucleotide selected from SEQ ID NOs:212, 228, 233, 259, 271, 287, 316-319, 324, 370, 379, 380, 383, 410, and 412 or a fragment thereof, SEQ ID NO:4, 20, 25, 51, 63, 79, 108-111, 116, 162, 171, 172, 175, 202, and 204. These polynucleotides may be used in an expression vector transformed into a host cell to produce a protein or a portion thereof by culturing the host cell under conditions for the expression of protein and recovering the protein from the host cell culture.

The microarray can be used for large scale genetic or gene expression analysis of a large number of novel target polynucleotides. These targets are prepared by methods well known in the art and are from mammalian cells or tissues which are in a certain stage of development or differentiation; have been treated with a known molecule or compound, such as a cytokine, growth factor, a drug, and the like; or have been extracted or biopsied from a mammal with a known or unknown condition, disorder, or disease before or after treatment. Specifically, the plurality of polynucleotides are useful to determine the differentiation of embryonic stem cells toward brain, heart, kidney, liver, lung, muscle or pancreatic tissues or to determine whether a cancer is metastatic or its source by analyzing biopsied tissue from diseased brain, heart, kidney, liver, lung, muscle, ovarian, pancreatic, small intestine, stomach, or uterine tissues. The plurality of polynucleotides may be used during the diagnosis of a cancer, an immunopathology, a neuropathology, and the like.

The target polynucleotides are hybridized to the probe polynucleotides for the purpose of defining a novel gene profile associated with that developmental stage, treatment, condition, disorder or disease. Subsequently, the gene profile can be used for diagnosis, prognosis, or monitoring of treatments where altered expression of known and novel genes is associated with a cancer, an immunopathology, a neuropathology, and the like. In some cases, a gene profile can be used to investigate an individual's predisposition to a condition, disorder or disease such as a cancer, an immunopathology, a neuropathology, and the like.

When the polynucleotides of the invention are employed as hybridizable polynucleotides on a microarray, the polynucleotides are organized in an ordered fashion so that each polynucleotide is present at a specified location on the substrate. Because the probe polynucleotides are at specified locations on the substrate, their hybridization patterns and intensities can be compared with the hybridization patterns and intensities of other known and novel polynucleotides to create an expression profile. Such a profile, interpreted in terms of expression levels of the cell and tissue specific, known, and novel genes can be correlated with a particular metabolic process, developmental stage, treatment, condition, disorder, disease, or stage of disease.

The plurality of polynucleotides can also be used to identify or purify a molecule or compound

which specifically binds to at least one of the polynucleotides. These molecules may be identified from a sample or in high throughput mode from a large number of molecules and compounds including mRNAs, cDNAs, genomic fragments, and the like. Typically, the molecules or compounds will be of particular diagnostic or therapeutic interest.

5 If nucleic acid molecules in a sample enhance the hybridization background, it may be advantageous to remove the offending molecules. One method for removing such molecules is by hybridizing the sample with immobilized probe polynucleotides and washing away those molecules that do not form hybridization complexes. At a later point, hybridization complexes can be dissociated, thereby releasing those molecules which specifically bind the probe polynucleotides.

#### 10 Method for Selecting Polynucleotide Probes

There are numerous different ways to select polynucleotides. Some of the more common ones include selecting probes from genes which are well known in the literature to have an association with a particular condition, disorder, or disease, which have a common functional characteristic such as the presence of a particular motif or domain or a signal peptide, which are  
15 expressed in a particular cell type or tissue such as blood or bone marrow, and the like.

Preferably, the probes are non-redundant; therefore, no more than one probe represents a particular gene. Control sequences, however, may be selected specifically for their redundancy.

Polynucleotides of the composition may be manipulated to optimize their performance in hybridization technologies. Polynucleotide selection may be optimized by examining the sequences  
20 using a computer algorithm to identify fragments lacking potential secondary structure. Computer algorithms such as those employed in Vector NTI software (Informax, N. Bethesda MD) or LASERGENE software (DNASTAR, Madison WI) are well known in the art. These programs search nucleic acid sequences to identify stem loop structures and tandem repeats and to analyze G+C content of the sequence. In mammalian arrays, those sequences with a G+C content greater than 60% may be  
25 excluded. Alternatively, polynucleotides can be optimized under experimental conditions to determine whether polynucleotide probes and their complementary targets hybridize optimally.

Where the greatest numbers of non redundant polynucleotides are desired, the polynucleotides may be compared with clustered or assembled sequences to assure that each polynucleotide is derived from a different gene. To obtain a longer or different probe for a particular gene, the polynucleotide  
30 may be physically extended utilizing the partial nucleotide sequences derived from the Incyte clone and employing the XL-PCR kit (Applied Biosystems, Foster City CA) or other means known in the art.

#### Polynucleotide Probes

Polynucleotide probes can be genomic DNA or cDNA or mRNA, or any RNA-like or DNA-like material, such as peptide nucleic acids, branched DNAs and the like. They may be the sense  
35 or antisense strand. Where targets are double stranded, probes may be either sense or antisense



strands. Where targets are single stranded, probes are complementary single strands.

In one embodiment, polynucleotide probes are cDNAs. The size of the cDNAs may vary and is preferably from 15 to 10,000 nucleotides, more preferably from 60 to 4000 nucleotides, and most preferably from 200-600 nucleotides.

5 In another embodiment, probes are plasmids. In this case, the cDNA sequence of interest is the insert sequence. Excluding the vector DNA and regulatory sequences, cDNA size may vary preferably from 15 to 10,000 nucleotides, more preferably from 60 to 4000 nucleotides, and most preferably from 200-600 nucleotides.

Polynucleotide probes can be prepared by a variety of synthetic or enzymatic methods well known in the art. Probes can be synthesized, in whole or in part, using chemical methods well known in the art (Caruthers et al. (1980) Nucleic Acids Symp Ser (7):215-233). Alternatively, probes can be produced enzymatically or recombinantly, by in vitro or in vivo transcription.

Nucleotide analogues can be incorporated into the probes by methods well known in the art. The only requirement is that the incorporated nucleotide analogues of the probe must base pair with target nucleotides. For example, certain guanine nucleotides can be substituted with hypoxanthine which base pairs with cytosine residues. However, these base pairs are less stable than those between guanine and cytosine. Alternatively, adenine nucleotides can be substituted with 2,6-diaminopurine which can form stronger base pairs than those between adenine and thymidine.

Additionally, probes can include nucleotides that have been derivatized chemically or enzymatically. Typical chemical modifications include derivatization with acyl, alkyl, aryl or amino groups.

Probes can be synthesized on a substrate. Synthesis on the surface of a substrate may be accomplished using a chemical coupling procedure and a piezoelectric printing apparatus as described by Baldeschweiler et al. (PCT/WO95/251116). Alternatively, the probe can be synthesized on a substrate surface using a self-addressable electronic device that controls when reagents are added as described by Heller et al. (USPN 5,605,662).

Complementary DNA (cDNA) can be arranged and then immobilized on a substrate. Probes can be immobilized by covalent means such as by chemical bonding procedures or UV. In one such method, a cDNA is bound to a glass surface which has been modified to contain epoxide or aldehyde groups. In another case, a cDNA probe is placed on a polylysine coated surface and then UV cross-linked as described by Shalon et al. (PCT/WO95/35505; incorporated herein by reference). In yet another method, a DNA is actively transported from a solution to a given position on a substrate by electrical means (Heller et al. supra). Alternatively, probes, clones, plasmids or cells can be arranged on a filter. In the latter case, cells are lysed, proteins and cellular components degraded, and the DNA is coupled to the filter by UV cross-linking.

Furthermore, probes do not have to be directly bound to the substrate, but rather can be bound to the substrate through a linker group. The linker groups are typically about 6 to 50 atoms long to provide exposure of the attached probe. Preferred linker groups include ethylene glycol oligomers, diamines, diacids and the like. Reactive groups on the substrate surface react with a terminal group of the linker to bind the linker to the substrate. The other terminus of the linker is then bound to the probe.

Probes can be attached to a substrate by sequentially dispensing reagents for probe synthesis on the substrate surface or by dispensing preformed DNA fragments to the substrate surface. Typical dispensers include a micropipette delivering solution to the substrate with a robotic system to control the position of the micropipette with respect to the substrate. There can be a multiplicity of dispensers so that reagents can be delivered to the reaction regions efficiently.

#### Sample Preparation

In order to conduct sample analysis, a sample containing targets is provided. The samples can be any sample containing targets and obtained from any bodily fluid (blood, urine, saliva, phlegm, gastric juices, etc.), cultured cells, biopsies, or other tissue or forensic preparations.

DNA or RNA can be isolated from a sample according to any of a number of methods well known to those of skill in the art. For example, methods of purification of nucleic acids are described in Tijssen (1993) Laboratory Techniques in Biochemistry and Molecular Biology: Hybridization With Nucleic Acid Probes, Part I. Theory and Nucleic Acid Preparation, Elsevier Science, New York NY). In one case, total RNA is isolated using TRIZOL reagent (Life Technologies, Gaithersburg MD), and mRNA is isolated using oligo d(T) column chromatography or glass beads. In one alternative, when targets are derived from an mRNA, targets can be a DNA reverse transcribed from an mRNA, an RNA transcribed from that DNA, a DNA amplified from that DNA, an RNA transcribed from the amplified DNA, and the like. When target is derived from DNA, target can be DNA amplified from DNA, or RNA reverse transcribed from DNA. In yet another alternative, targets are prepared by more than one method.

When targets are amplified it is desirable to amplify the nucleic acids in the sample and to maintain their relative abundances, including low abundance transcripts. Total mRNA can be amplified by reverse transcription using a reverse transcriptase and a primer consisting of oligo d(T) and a sequence encoding the phage T7 promoter to provide a single stranded DNA template. The second DNA strand is polymerized using a DNA polymerase and an RNase which assists in breaking up the DNA/RNA hybrid. After synthesis of the double stranded DNA, T7 RNA polymerase can be added, and RNA transcribed from the second DNA strand template as described by Van Gelder et al. (USPN 5,545,522). RNA can be amplified in vitro, in situ or in vivo (Eberwine, USPN 5,514,545). It is also advantageous to include quantitation controls to assure that amplification and labeling

procedures do not change the true abundance of transcripts in a sample. For this purpose, a sample is spiked with a known amount of control nucleic acid, and the probes include control probes which specifically hybridize with the control nucleic acid. After hybridization and processing, the hybridization signals should reflect accurately the amounts of control nucleic acid added to the sample.

- 5 Prior to hybridization, it may be desirable to fragment the nucleic acids of the sample. Fragmentation improves hybridization by minimizing secondary structure and cross-hybridization among the nucleic acids in the sample or with noncomplementary probes. Fragmentation can be performed by mechanical or chemical means.

- The nucleic acids may be labeled with one or more labeling moieties to allow for detection and  
10 quantitation of hybridization complexes. The labeling moieties can include compositions that can be detected by spectroscopic, photochemical, biochemical, bioelectronic, immunochemical, electrical, optical or chemical means. The labeling moieties include radioisotopes, such as  $^{32}\text{P}$ ,  $^{33}\text{P}$  or  $^{35}\text{S}$ ; chemiluminescent compounds, labeled binding proteins, heavy metal atoms, spectroscopic markers such as fluorescent markers and dyes; magnetic labels, linked enzymes, mass spectrometry tags, spin labels,  
15 electron transfer donors and acceptors, and the like.

- Exemplary dyes include quinoline dyes, triarylmethane dyes, phthaleins, azo dyes, cyanine dyes, and the like. Preferably, fluorescent markers absorb light above about 300 nm, more preferably above 400 nm, and usually emit light at wavelengths at least greater than 10 nm above the wavelength of the light absorbed. Preferred fluorescent markers include fluorescein, phycoerythrin, rhodamine,  
20 lissamine, and Cy3 and Cy5.

- Labeling can be carried out during an amplification reaction, such as polymerase chain and in vitro transcription reactions; by nick translation, or by 5' or 3'-end-labeling reactions. In one case, labeled nucleotides are used in an in vitro transcription reaction. When the label is incorporated after or without an amplification step, the label is incorporated either by using a terminal transferase or a  
25 kinase on the 5' end of the target polynucleotide and then incubating overnight with a labeled oligonucleotide in the presence of T4 RNA ligase.

- Alternatively, the labeling moiety can be incorporated after hybridization once a probe/target complex has formed. In one case, biotin is first incorporated during an amplification step as described above. After the hybridization reaction, unbound nucleic acids are rinsed away so that the only biotin  
30 remaining bound to the substrate is that attached to targets that are hybridized to probes. Then, an avidin-conjugated fluorophore, such as avidin-phycoerythrin, that binds with high affinity to biotin is added. In another case, the labeling moiety is incorporated by intercalation into preformed target/probe complexes. In this case, an intercalating dye such as a psoralen-linked dye can be employed.

#### Screening Assays

- 35 Probes or polynucleotides may be used to screen a library of molecules or compounds for

specific binding affinity. The libraries may be DNA molecules, RNA molecules, PNAs, peptides, proteins such as transcription factors, enhancers, repressors, and other organic or inorganic ligands which regulate activities such as replication, transcription, or translation of polynucleotides in the biological system. The assay involves combining the probe with the library of molecules or compounds under conditions that allow specific binding, and detecting specific binding to a ligand which specifically binds the probe.

Similarly, a protein or a portion thereof transcribed and translated from a probe may be used to screen libraries of molecules or compounds in any of a variety of screening assays. The protein or portion thereof may be free in solution, affixed to an abiotic or biotic substrate, borne on a cell surface, or located intracellularly. Specific binding between the protein and a ligand may be measured. Depending on the kind of library being screened, the assay may be used to identify DNA, RNA, or PNAs, agonists, antagonists, antibodies, immunoglobulins, inhibitors, mimetics, peptides, proteins, drugs, or any other ligand, that specifically binds the protein.

#### Purification of Ligand

Probes may be used to purify a ligand from a sample. A method for using a probe to purify a ligand would involve combining the probe with a sample under conditions to allow specific binding, detecting specific binding, recovering the bound protein, and using an appropriate agent to separate the polynucleotide from the purified ligand.

Similarly, the encoded protein or a portion thereof may be used to purify a ligand from a sample. A method for using a protein or a portion thereof to purify a ligand would involve combining the protein or a portion thereof with a sample under conditions to allow specific binding, detecting specific binding between the protein and ligand, recovering the bound protein, and using an appropriate agent to separate the protein from the purified ligand.

#### Hybridization and Detection

Hybridization causes a denatured polynucleotide probe and a denatured complementary target to form a stable duplex through base pairing. Hybridization methods are well known to those skilled in the art. (See Ausubel, *supra*, units 2.8-2.11, 3.18-3.19 and 4.6-4.9.) Conditions can be selected for hybridization where completely complementary probe and target can hybridize, i.e., each base pair must interact with its complementary base pair. Alternatively, conditions can be selected where probe and target have mismatches of up to about 10% but are still able to hybridize. Suitable conditions can be selected by varying the concentrations of salt in the prehybridization, hybridization, and wash solutions or by varying the hybridization and wash temperatures. With some substrates, temperature can be decreased by adding formamide to the prehybridization and hybridization solutions.

Hybridization can be performed at low stringency with buffers, such as 5xSSC with 1% sodium dodecyl sulfate (SDS) at 60°C, which permits hybridization between probe and target

sequences that contain some mismatches to form probe/target complexes. Subsequent washes are performed at higher stringency with buffers such as 0.2xSSC with 0.1% SDS at either 45°C (medium stringency) or 68°C (high stringency), to maintain hybridization of only those probe/target complexes that contain completely complementary sequences. Background signals can be reduced by the use of  
5 detergents such as SDS, Sarcosyl, or TRITON X-100 (Sigma-Aldrich, St. Louis MO) or a blocking agent, such as salmon sperm DNA.

Hybridization specificity can be evaluated by comparing the hybridization of control probe to target sequences that are added to a sample in a known amount. The control probe may have one or more sequence mismatches compared with the corresponding target. In this manner, it is possible to  
10 evaluate whether only complementary probes are hybridizing to the targets or whether mismatched hybrid duplexes are forming.

Hybridization reactions can be performed in absolute or differential hybridization formats. In the absolute hybridization format, probes from one sample are hybridized to microarray probes, and signals detected after hybridization complexes form. Signal strength correlates with probe levels in a  
15 sample. In the differential hybridization format, differential expression of a set of genes in two biological samples is analyzed. Probes from the two samples are prepared and labeled with different labeling moieties. A mixture of the two labeled targets is hybridized to the microarray probes, and signals are examined under conditions in which the emissions from the two different labels are individually detectable. Targets in the microarray that are hybridized to substantially equal numbers of  
20 probes derived from both biological samples give a distinct combined fluorescence (Shalon, PCT/WO95/35505). In a preferred embodiment, the labels are fluorescent labels with distinguishable emission spectra, such as a lissamine conjugated nucleotide analog and a fluorescein conjugated nucleotide analog. In another embodiment Cy3 and Cy5 fluorophores (Amersham Pharmacia Biotech, Piscataway NJ) are employed.

25 After hybridization, the microarray is washed to remove nonhybridized polynucleotides, and complex formation between the hybridizable array probes and the targets is examined. Methods for detecting complex formation are well known to those skilled in the art. In a preferred embodiment, the probes are labeled with a fluorescent label, and measurement of levels and patterns of fluorescence indicative of complex formation is accomplished by fluorescence microscopy, preferably confocal  
30 fluorescence microscopy. An argon ion laser excites the fluorescent label, emissions are directed to a photomultiplier, and the amount of emitted light is detected and quantitated. The detected signal should be proportional to the amount of probe/target complexes at each position of the microarray. The fluorescence microscope can be associated with a computer-driven scanner device to generate a quantitative two-dimensional image of hybridization intensity. The scanned image is examined to  
35 determine the abundance/expression level of hybridized probe.

Typically, microarray fluorescence intensities can be normalized to take into account variations in hybridization intensities when more than one microarray is used under similar test conditions. In a preferred embodiment, individual polynucleotide probe/target complex hybridization intensities are normalized using the intensities derived from internal normalization controls contained on each  
5 microarray.

#### Expression Profiles

This section describes an expression profile using the polynucleotides of this invention. The reference set can be used as part of a expression profile which detects changes in the expression of novel genes whose transcripts are modulated in a particular metabolic response, treatment, condition,  
10 disorder, or disease. These genes will include genes whose altered expression is correlated with a cancer, an immunopathology, a neuropathology, and the like.

The expression profile comprises a plurality of detectable hybridization complexes. Each complex is formed by hybridization of one or more probes to one or more complementary targets. At least one of the probes, preferably a plurality of probes, is hybridized to a complementary target  
15 forming, at least one and preferably, a plurality of complexes. A complex is detected by incorporating at least one labeling moiety. The expression profiles provide "snapshots" that can show unique expression patterns that are characteristic of a metabolic process, treatment, condition, disorder or disease.

After performing hybridization experiments and detecting signals from a microarray, particular  
20 probes can be identified and selected based on their expression patterns. Such probes can be used to clone a full length sequence for the gene, to screen a library for a closely related homolog, to screen for or purify ligands, or to produce a protein.

#### Utility of the Invention

The plurality of polynucleotides can be used as hybridizable elements in a microarray. Such a  
25 microarray can be employed in several applications including diagnostics, prognostics and treatment regimens, and drug discovery and development for conditions, disorders, and diseases such as cancer, an immunopathology, a neuropathology and the like.

#### Expression Profiles

In one situation, the microarray is used to monitor the progression of disease. The differences  
30 in gene expression between healthy and diseased tissues or cells can be assessed and cataloged. By analyzing changes in patterns of gene expression, disease can be diagnosed at earlier stages before the patient is symptomatic. The invention can be used to formulate a prognosis and to design a treatment regimen. The invention can also be used to monitor the efficacy of treatment. For treatments with known side effects, the microarray is employed to "fine tune" the treatment regimen. A dosage is  
35 established that causes a change in genetic expression patterns indicative of successful treatment.

Expression patterns associated with the onset of undesirable side effects are avoided. This approach may be more sensitive and rapid than waiting for the patient to show inadequate improvement, or to manifest side effects, before altering the course of treatment.

Alternatively, animal models which mimic a human disease can be used to characterize  
5 expression profiles associated with a particular condition, disorder or disease or the treatment of the condition, disorder or disease. Experimental treatment regimens may be tested in these animal models using microarrays to establish and then follow expression profiles over time. In addition, microarrays may be used with cell cultures or tissues removed from animal models to rapidly screen large numbers of candidate drug molecules, looking for ones that produce an expression profile similar to those of  
10 known therapeutic drugs, with the expectation that molecules with the same expression profile will likely have similar therapeutic effects. Thus, the invention provides the means to rapidly determine the molecular mode of action of a drug.

#### Embryonic Stem Cells

Embryonic (ES) stem cells isolated from rodent or human embryos retain the potential to form  
15 embryonic tissues. When ES cells such as the mouse 129/SvJ cell line are placed in a blastocyst from the C57BL/6 mouse strain, they resume normal development and contribute to tissues of the live-born animal. ES cells are preferred for use in the creation of experimental knockout and knockin animals. In mice, the method for this process is well known in the art and the steps are: the cDNA is introduced into a vector, the vector is transformed into ES cells, transformed cells are identified and microinjected  
20 into mouse cell blastocysts, blastocysts are surgically transferred to pseudopregnant dams. The resulting chimeric progeny are genotyped and bred to produce heterozygous or homozygous strains.

ES cells are also used for the treatment of victims of Parkinson's disease, stroke, and other neuropathologies (The Scientist, 14(18):1ff, September 2000). Pharmaceutical companies are also  
25 targeting disorders of the liver, kidney, and pancreas, specifically alpha-1 antitrypsin, polycystic kidney disease, and diabetes, respectively. In time, traumatic damage to the nervous system and internal organs may also be treated by transplantation of cells or organs which are differentiated from embryonic stem cells. The present invention may be used to characterize the developmental pathways of the differentiation processes that give rise to brain, heart, kidney, liver, lung, muscle, ovarian, pancreatic, small intestine, stomach, or uterine tissues.

#### Knockout Analysis

In gene knockout analysis, a region of a gene is enzymatically modified to include a non-natural intervening sequence such as the neomycin phosphotransferase gene (neo; Capecchi (1989) Science  
244:1288-1292). The modified gene is transformed into cultured ES cells and integrates into the endogenous genome by homologous recombination. The inserted sequence disrupts transcription and  
35 translation of the endogenous gene.

### Knockin Analysis

ES cells can be used to create knockin humanized animals or transgenic animal models of human diseases. With knockin technology, a region of a human gene is injected into animal ES cells, and the human sequence integrates into the animal cell genome. Transgenic progeny or inbred lines are studied and treated with potential pharmaceutical agents to obtain information on the progression and treatment of the analogous human condition.

As described herein, the uses of the cDNAs, provided in the Sequence Listing of this application, and their encoded proteins are exemplary of known techniques and are not intended to reflect any limitation on their use in any technique that would be known to the person of average skill in the art. Furthermore, the cDNAs provided in this application may be used in molecular biology techniques that have not yet been developed, provided the new techniques rely on properties of nucleotide sequences that are currently known to the person of ordinary skill in the art, e.g., the triplet genetic code, specific base pair interactions, and the like. Likewise, reference to a method may include combining more than one method for obtaining, assembling or expressing cDNAs that will be known to those skilled in the art. It is also to be understood that this invention is not limited to the particular methodology, protocols, and reagents described, as these may vary. It is also understood that the terminology used herein is for the purpose of describing particular embodiments only, and is not intended to limit the scope of the present invention which will be limited only by the appended claims. The examples below are provided to illustrate the subject invention and are not included for the purpose of limiting the invention.

### **EXAMPLES**

For purposes of example, the preparation and sequencing of the BRAINON01 cDNA library is described. Preparation and sequencing of other cDNAs in libraries in the LIFESEQ database (Incyte Genomics) have varied over time, and the gradual changes involved use of kits, plasmids, and machinery available at the particular time the library was made and analyzed.

#### **I cDNA Library Construction**

The BRAINON01 normalized cDNA library was constructed from cancerous brain tissue obtained from a 26-year-old Caucasian male during cerebral meningeal excision following diagnosis of grade 4 oligoastrocytoma localized in the right fronto-parietal part of the brain. The tumor had been irradiated (5800 rads). Patient history included hemiplegia, epilepsy, ptosis of eyelid, and common migraine, and medications included Dilantin® (Parke-Davis, Morris Plains NJ).

The frozen tissue was homogenized and lysed using a POLYTRON homogenizer (PT-3000; Brinkmann Instruments, Westbury NY) in guanidinium isothiocyanate solution. The lysate was extracted with acid phenol, pH 4.7, per Stratagene RNA isolation protocol (Stratagene, San Diego CA). The RNA was extracted with an equal volume of acid phenol, reprecipitated using 0.3 M sodium



acetate and 2.5 volumes of ethanol, resuspended in DEPC-treated water, and treated with DNase for 25 min at 37°C. The RNA extraction was repeated with phenol, pH 8.7, and precipitated with sodium acetate and ethanol as before. The mRNA was isolated with the OLIGOTEX kit (Qiagen, Chatsworth CA) and used to construct the cDNA library.

5        The mRNA was handled according to the recommended protocols in the SUPERScript plasmid system (Life Technologies). cDNAs were fractionated on a SEPHAROSE CL4B column (Amersham Pharmacia Biotech), and those cDNAs exceeding 400 bp were ligated into PSPOrt I plasmid (Life Technologies). The plasmid was transformed into DH5 $\alpha$  competent cells (Life Technologies) to construct the BRAINOT03 library.

## 10    II        Normalization of the cDNA Library

4.9 x 10<sup>6</sup> independent clones of the BRAINOT03 library were grown in liquid culture under carbenicillin (25mg/L) and methicillin (1mg/ml) selection following transformation by electroporation into DH12S competent cells (Life Technologies). The culture was monitored using a DU-7 spectrophotometer (Beckman Coulter, Fullerton CA) until it reached an OD<sub>600</sub> of 0.2, and then  
15    superinfected with a 5-fold excess of the helper phage M13K07 (Vieira et al. (1987) Methods Enzymol 153:3-11).

To reduce the number of highly expressed cDNAs, the library was normalized in a single round according to the procedure of Soares et al. (1994, Proc Natl Acad Sci 91:9928-9932) with the following modifications: 1) the primer to template ratio in the primer extension reaction was increased  
20    from 2:1 to 10:1, 2) the ddNTP concentration was reduced to 150 $\mu$ M to allow generation of longer (400-1000nt) primer extension products, and 3) the reannealing hybridization was extended from 13 to 48 hours. After the single stranded DNA circles were purified by hydroxyapatite chromatography and converted to partially double-stranded by random priming, the cDNAs were electroporated into DH10B competent bacteria (Life Technologies) to construct the BRAINON01 normalized library.

## 25    III        Isolation and Sequencing of cDNA Clones

Plasmid DNA was released from bacterial cells and purified using the REAL Prep 96 plasmid kit (Qiagen). This kit enabled the simultaneous purification of 96 samples in a 96-well block using multi-channel reagent dispensers. The recommended protocol was employed except for the following changes: 1) the bacteria were cultured in 1 ml of sterile TERRIFIC BROTH (BD Biosciences, Sparks  
30    MD) with carbenicillin at 25 mg/L and glycerol at 0.4%; 2) the cultures were inoculated, incubated for 19 hours, and then lysed with 0.3 ml of lysis buffer; and 3) following isopropanol precipitation, the plasmid DNA pellet was resuspended in 0.1 ml of distilled water.

The cDNAs were prepared using a MICROLAB 2200 system (Hamilton, Reno NV) in combination with DNA ENGINE thermal cyclers (PTC200; MJ Research, Waltham MA). The  
35    cDNAs were sequenced by the method of Sanger and Coulson (1975; J Mol Biol 94:441f) using ABI

PRISM 377 DNA sequencing systems (Applied Biosystems). Most of the sequences were sequenced using standard ABI protocols and kits (Applied Biosystems) at solution volumes of 0.25x - 1.0x. In the alternative, some of the sequences were sequenced using solutions and dyes from Amersham Pharmacia Biotech.

5

#### IV Selection of Sequences for the Microarray

Incyte clones were mapped to non-redundant Unigene clusters (Unigene database (build 46), NCBI; Shuler (1997) *J Mol Med* 75:694-698), and the 5' clone with the strongest BLAST alignment (at least 90% identity and 100 bp overlap) was chosen, verified, and used in the construction of the  
10 microarray. The UNIGEM V microarray (Incyte Genomics) contains 7075 array elements which represent 4610 annotated genes and 2,184 unannotated clusters. Table 1 shows the GenBank 119 annotations for SEQ ID NOs:1-416 of this invention as produced by BLAST analysis.

#### V Homology Searching of Polynucleotides and Proteins

BLAST involves finding similar segments between the query sequence and a database  
15 sequence, evaluating the statistical significance of any similarities, and reporting only those matches that satisfy a user-selectable threshold of significance. BLAST produces alignments of both nucleotide and amino acid sequences to determine sequence similarity.

The fundamental unit of the analysis is the High scoring Segment Pair (HSP). An HSP consists of two sequence fragments of arbitrary, but equal lengths, whose alignment is locally maximal  
20 and for which the alignment score meets or exceeds threshold of significance set by the user.

The basis of the search is the product score, which is defined as:

$$\frac{\% \text{ sequence identity} \times \% \text{ maximum BLAST score}}{100}$$

The product score takes into account both the degree of identity between two sequences and the  
25 length of the sequence match as reflected in the BLAST score. The BLAST score is calculated by scoring +5 for every base that matches in an HSP and -4 for every mismatch. For a product score of 40, the match will be exact within a 1% to 2% error and for a product score of 70, the match will be exact. Homologous molecules usually show product scores between 15 and 40, although lower scores may identify related molecules. The P-value for any given HSP is a function of its expected frequency  
30 of occurrence and the number of HSPs observed against the same database sequence with scores at least as high.

Percent sequence identity is found in a comparison of two or more amino acid or nucleic acid sequences. Percent identity can be determined electronically using the MEGALIGN program, a component of LASERGENE software (DNASTAR). The percent similarity between two amino acid  
35 sequences is calculated by dividing the length of sequence A, minus the number of gap residues in

sequence A, minus the number of gap residues in sequence B, into the sum of the residue matches between sequence A and sequence B, times one hundred. Gaps of low or of no homology between the two amino acid sequences are not included in determining percentage similarity.

Sequences with conserved protein motifs may be searched using the BLOCKS search program.

- 5 This program analyses sequence information contained in the Swiss-Prot and PROSITE databases and is useful for determining the classification of uncharacterized proteins translated from genomic or cDNA sequences (Bairoch et al. (1997) *Nucleic Acids Res* 25:217-221; Attwood et al. (1997) *J Chem Inf Comput Sci* 37:417-424). PROSITE database is a useful source for identifying functional or structural domains that are not detected using motifs due to extreme sequence divergence. Using
- 10 weight matrices, these domains are calibrated against the SWISS-PROT database to obtain a measure of the chance distribution of the matches.

- The PRINTS database can be searched using the BLIMPS search program to obtain protein family "fingerprints". The PRINTS database complements the PROSITE database by exploiting groups of conserved motifs within sequence alignments to build characteristic signatures of different
- 15 protein families. For both BLOCKS and PRINTS analyses, the cutoff scores for local similarity were: >1300=strong, 1000-1300=suggestive; for global similarity were:  $p < \exp^{-3}$ ; and for strength (degree of correlation) were: >1300=strong, 1000-1300=weak.

#### **VI Extension of cDNA Clones**

- Some of the nucleic acid sequences of the Sequence Listing, designed F, R, or T, were
- 20 produced by extension of an appropriate fragment of the original clone insert using oligonucleotide primers designed from this fragment. One primer was synthesized to initiate 5' extension of the known sequence, and the other primer, to initiate 3' extension of the known sequence. The initial primers were designed using OLIGO software (Molecular Insights, Cascade CO), or another appropriate program, to be about 22 to 30 nucleotides in length, to have a GC content of about 50% or more, and to anneal to
- 25 the target sequence at temperatures of about 68°C to about 72°C. Any stretch of nucleotides which would result in hairpin structures and primer-primer dimerizations was avoided.

Selected human cDNA libraries were used to extend the sequence. If more than one extension was necessary or desired, additional or nested sets of primers were designed.

- High fidelity amplification was obtained by PCR using methods well known in the art. PCR
- 30 was performed in 96-well plates using the DNA ENGINE thermal cycler (MJ Research). The reaction mix contained DNA template, 200 nmol of each primer, reaction buffer containing  $Mg^{2+}$ ,  $(NH_4)_2SO_4$ , and  $\beta$ -mercaptoethanol, Taq DNA polymerase (Amersham Pharmacia Biotech), ELONGASE enzyme (Life Technologies), and Pfu DNA polymerase (Stratagene), with the following parameters for primer pair PCI A and PCI B: Step 1: 94°C, 3 min; Step 2: 94°C, 15 sec; Step 3: 60°C, 1 min; Step 4: 68°C,
- 35 2 min; Step 5: Steps 2, 3, and 4 repeated 20 times; Step 6: 68°C, 5 min; Step 7: storage at 4°C. In the

alternative, the parameters for primer pair T7 and SK+ were as follows: Step 1: 94°C, 3 min; Step 2: 94°C, 15 sec; Step 3: 57°C, 1 min; Step 4: 68°C, 2 min; Step 5: Steps 2, 3, and 4 repeated 20 times; Step 6: 68°C, 5 min; Step 7: storage at 4°C.

The concentration of DNA in each well was determined by dispensing 100 µl PICOGREEN reagent (0.25% v/v PICOGREEN (Molecular Probes, Eugene OR) dissolved in 1x TE) and 0.5 µl of undiluted PCR product into each well of an opaque fluorimeter plate (Corning Costar, Acton MA), allowing the DNA to bind to the reagent. The plate was scanned in a Fluoroskan II (Labsystems Oy, Helsinki FI) to measure the fluorescence of the sample and to quantify the concentration of DNA. A 5 µl to 10 µl aliquot of the reaction mixture was analyzed by electrophoresis on a 1 % agarose minigel to determine which reactions were successful in extending the sequence.

The extended nucleotides were desalted and concentrated, transferred to 384-well plates, digested with CviJI cholera virus endonuclease (Molecular Biology Research, Madison WI), and sonicated or sheared prior to religation into pUC 18 vector (Amersham Pharmacia Biotech). For shotgun sequencing, the digested nucleotides were separated on 0.6% to 0.8% agarose gels, fragments were excised, and agar digested with AGARACE (Promega). Extended clones were religated using T4 ligase (New England Biolabs, Beverly MA) into pUC 18 vector (Amersham Pharmacia Biotech), treated with Pfu DNA polymerase (Stratagene) to fill-in restriction site overhangs, and transfected into competent *E. coli* cells. Transformed cells were selected on antibiotic-containing media, and individual colonies were picked and cultured overnight at 37°C in 384-well plates in LB/2x carbenicillin liquid media.

The cells were lysed, and DNA was amplified using Taq DNA polymerase (Amersham Pharmacia Biotech) and Pfu DNA polymerase (Stratagene) with the following parameters: Step 1: 94°C, 3 min; Step 2: 94°C, 15 sec; Step 3: 60°C, 1 min; Step 4: 72°C, 2 min; Step 5: steps 2, 3, and 4 repeated 29 times; Step 6: 72°C, 5 min; Step 7: storage at 4°C. DNA was quantified by PICOGREEN reagent (Molecular Probes) as described above. Samples with low DNA recoveries were reamplified using the conditions described above. Samples were diluted with 20% dimethylsulphoxide (1:2 v/v), and sequenced using DYENAMIC energy transfer sequencing primers and the DYENAMIC DIRECT kit (Amersham Pharmacia Biotech) or the ABI PRISM BIGDYE terminator kit (Applied Biosystems).

#### **VII mRNA for Target Polynucleotides**

The mRNAs or tissues for preparing target polynucleotides were obtained from Biochain Institute (San Leandro CA), International Institute for Advanced Medicine (Exeter PA), and Oncormed (Gaithersburg MD). RNA was extracted from tissue samples using the extraction protocol and purification procedures described above.

#### **VIII Microarray Preparation, Labeling of Targets, and Hybridization Analyses**

##### **35 Substrate Preparation**

Probe polynucleotides were amplified from bacterial vectors by thirty cycles of PCR using

primers complementary to vector sequences flanking the insert and purified using SEPHACRYL-400 beads (Amersham Pharmacia Biotech). Purified polynucleotides were robotically arrayed onto a glass microscope slide (Corning Science Products, Corning NY) previously coated with 0.05% aminopropyl silane (Sigma-Aldrich) and cured at 110°C. The microarray was exposed to UV irradiation in a

5 **STRATALINKER UV-crosslinker (Stratagene).**

**Target Preparation**

Each mRNA sample, shown in Table 2, was reverse transcribed using MMLV reverse transcriptase in the presence of dCTP-Cy3 or dCTP-Cy5 (Amersham Pharmacia Biotech) according to standard protocol. After incubation at 37°C, the reaction was stopped with 0.5 M sodium hydroxide, and RNA was degraded at 85°C. The target polynucleotides were purified using CHROMASPIN 30 columns (Clontech, Palo Alto CA) and ethanol precipitation.

**Hybridization**

The hybridization mixture, containing 0.2 mg of each of the Cy3 and Cy5 labeled target polynucleotides, was heated to 65°C, and dispensed onto the UNIGEM V microarray (Incyte Genomics) surface. The microarray was covered with a coverslip and incubated at 60°C C. The microarrays were sequentially washed at 45°C in moderate stringency buffer (1xSSC and 0.1% SDS) and high stringency buffer (0.1xSSC) and dried.

**Detection**

A confocal laser microscope was used to detect the fluorescence-labeled hybridization complexes. Excitation wavelengths were 488 nm for Cy3 and 632 nm for Cy5. Each array was scanned twice, one scan per fluorophore. The emission maxima was 565 nm for Cy3 and 650 nm for Cy5. The emitted light was split into two photomultiplier tube detectors based on wavelength. The output of the photomultiplier tube was digitized and displayed as an image, where the signal intensity was represented using a linear 20 color transformation, with red representing a high signal and blue a low signal. The fluorescence signal for each probe was integrated to obtain a numerical value corresponding to the signal intensity using GEMTOOLS expression analysis software (Incyte Genomics).

**IX Data Analysis and Results**

Out of the 7075 genes present on UNIGEM V, 3627 genes or 51 % were expressed at a significant level across all 30 tissue samples. Significance was defined as signal to background ratio exceeding 2.5 and area hybridization exceeding 40% for both probes. All data was transformed so that differential gene expression values were Log base 2 scale.

**Analysis of Variance**

For each gene, an ANOVA test was run using the tissue categories as the grouping variable. The ANOVA tested whether measurements across samples belonging to known categories were associated with those categories. ANOVA compares the Variance between (Vb) categories to the Variance within (Vw) categories. The ratio of Vb divided by Vw (F ratio) was compared to the F

distribution for a population of equal degree of freedom (DF) and the probability of the F ratio was returned.

### Anova Computation

5

$$F = \frac{V_{between}}{V_{within}}$$

$$V_{within} = \frac{\sum_i (X_i - \bar{X}_G)^2}{(N - k)}$$

$$V_{between} = \frac{\sum_G N_G (\bar{X}_G - \bar{X}_T)^2}{(k - 1)}$$

$$DF = (N-k)*(k-1)$$

$X_i$  : Individual value

$N_G$  : Number of Individuals in Category

$\bar{X}_G$  : Category Mean

$\bar{X}_T$  : Population Mean

$N$  : Number of Individuals

$k$  : Number of Categories

The null hypothesis states that if the measurement variations between samples are due to chance only, the variance within categories and variance between categories should be the same.

- 10 Therefore, in the absence of any significant association between gene expression and tissue categories, the probability returned by ANOVA is equal to 1. Reciprocally, a strong association between gene expression and tissue categories implies that the variance between samples is significantly greater than the variance within categories, and therefore the probability returned by ANOVA is small.

The data for the 340 genes shown in Table 3 was used to produce Table 4 which shows that each gene

- 15 selected for annotation scored an ANOVA probability equal or below  $10^{-5}$ .

### Gene Annotation

Since selection criterion imposed that the variances of measurement within tissue categories were small (see above), it was acceptable to summarize these measurements as the average of the measurements within each tissue category. Furthermore, in order to emphasize differences between tissue categories for each gene, the differences between tissue averages and all-tissues average were computed; formula and values are shown in Table 5.

- 20 Using these differential average values, genes were associated with a primary tissue category according to the highest differential average value. A minimum differential average value of 1.5 was required to associate a gene with a tissue category. When possible, genes were associated with a secondary, tertiary, and even quaternary tissue category according to the second, third, and fourth highest differential average values, respectively.

### **X Screening Molecules for Specific Binding with the Polynucleotide or Protein**

- The polynucleotide or fragments thereof and the protein or portions thereof are labeled with  $^{32}\text{P}$ -dCTP, Cy3-dCTP, Cy5-dCTP (Amersham Pharmacia Biotech), or BIODIPY or FITC (Molecular Probes), respectively. Candidate molecules or compounds previously arranged on a substrate are incubated in the presence of labeled nucleic or amino acid. After incubation under conditions for either a

polynucleotide or protein, the substrate is washed, and any position on the substrate retaining label, which indicates specific binding or complex formation, is assayed. The binding molecule is identified by its arrayed position on the substrate. Data obtained using different concentrations of the nucleic acid or protein are used to calculate affinity between the labeled nucleic acid or protein and the bound molecule.

- 5 High throughput screening using very small assay volumes and very small amounts of test compound is fully described in Burbaum et al. USPN 5,876,946.

All patents and publications mentioned in the specification are incorporated herein by reference. Various modifications and variations of the described method and system of the invention will be apparent to those skilled in the art without departing from the scope and spirit of the invention.

- 10 Although the invention has been described in connection with specific preferred embodiments, it should be understood that the invention as claimed should not be unduly limited to such specific embodiments. Indeed, various modifications of the described modes for carrying out the invention that are obvious to those skilled in the field of molecular biology or related fields are intended to be within the scope of the following claims.

TABLE 1

SEQ ID	cDNA	SEQ ID	cDNA	Tissue	Description of GenBank Homolog
1	2380381	209	1345551CB1	heart	g602702 mitochondrial 2,4-dienoyl-CoA
2	1618422	210	1618422.con	heart	g285990 mRNA for KIAK0002 gene
3	2672064	211	4646418CB1	heart	g1399027 cysteine rich prot 2
4	608361	212	608361.con	heart	g6808282 mRNA; cDNA DKFZp586O0221
5	1922596	213	2483470CB1	heart	g3452378 glutamate oxaloacetate transaminase, exon 9
6	1850033	214	1850033CB1	heart	g189010 HUMMLC2At
7	986987	215	3030106CB1	heart	g809558 mRNA for cardiac myosin bindin
8	718807	216	718807.con	heart	g1526977 mRNA for ryanodine receptor 2
9	2880435	217	2880435.con	heart	g1841371 MURR1 mRNA
10	187326	218	187326.con	heart	g4071059 TNNT3
11	3208425	219	3208425.con	skel muscle	g28596 aldolase A
12	1668474	220	1668474.con	skel muscle	g178645 erythroid ankyrin mRNA
13	1622542	221	1622542.con	skel muscle	g3882276 mRNA for KIAA0778 protein
14	4014318	222	4014318.con	skel muscle	g306472 DHP-sensitive calcium channel
15	2394888	223	1485879CB1	skel muscle	g791039 mRNA for skeletal muscle-specific calpain
16	1345550	224	2637261CB1	skel muscle	g179787 carbonic anhydrase III
17	1719955	225	1719955.con	skel muscle	g34788 mRNA for muscle specific enolase
18	2256026	226	2256026.con	skel muscle	g1021572 CpG island DNA genomic MseI fragment
19	1538086	227	2501821CB1	skel muscle	g1212945 mRNA for guanidinoacetateN-methyltransferase
20	958633	228	1532783CB1	skel muscle	g7297634 CG5676 gene product
21	2635943	229	3013501CB1	skel muscle	g3153910 muscle glycogen phosphorylase
22	121888	230	3405838CB1	skel muscle	g4808812 myosin heavy chain IIa
23	1627492	231	1627492.con	skel muscle	g3127082 FIP2 alternatively translated mRNA
24	4073867	232	3354111CB1	skel muscle	g4426911 phytanoyl-CoA alpha hydroxylase
25	2190170	233	1866437CB1	skel muscle	g5759308 putative glioblastoma cell differentiation-related protein
26	972224	234	972224.con	skel muscle	g1220345 myosin light chain 2
27	1413644	235	1413644CB1	skel muscle	g409928 adenyl cyclase-associated prot (CAP2)
28	1538224	236	1538224.con	skel muscle	g439602 Rad mRNA
29	2623268	237	2623268.con	skel muscle	g6523810 FEZ2 protein
30	1665533	238	1665533.con	skel muscle	g1620035 XIB mRNA, complete cds
31	981484	239	981484CB1	skel muscle	g34837 MYF6 for muscle determination factor
32	973629	240	973629.con	skel muscle	g188591 alkali myosin light chain 1



TABLE 1

SEQ ID	cDNA	SEQ ID	cDNA	Tissue	Description of GenBank Homolog
33	1539638	241	1539638CB1	skel muscle	g188582 myosin light chain 1 slow a
34	3015758	242	3010791CB1	skel muscle	g402646 mRNA for fast MyBP-C
35	2832314	243	2832314.con	skel muscle	g338826 TCB gene encoding cytosolic thyroid hormone-binding protein
36	1702996	244	912973CB1	skel muscle	g180621 cytoplasmic linker protein-170 alpha 2
37	839947	245	122365CB1	skel muscle	g337721 ryanodine receptor mRNA
38	1867522	246	974936CB1	skel muscle	g1943766 sarcoplipin
39	1987831	247	1987831.con	skel muscle	g180708 calcineurin A2
40	2639708	248	1642009CB1	skel muscle	g339964 slow-twitch skeletal troponin I
41	973815	249	2148260CB1	skel muscle	g546020 troponin T
42	2079906	250	1852756CB1	Uterus	g190153 replication factor C
43	2852042	251	2852042.con	Uterus	g181070 cysteine-rich peptide mRNA
44	2368282	252	2665890CB1	Ovary	g181375 cholesterol side-chain cleavage
45	2831248	253	2831248.con	Ovary	g32344 gene for heterogeneous RNP
46	182802	254	182802.con	Ovary	g257052 3 beta-hydroxysteroid dehydrogenase
47	1003884	255	1520287CB1	Ovary	g186836 laminin B1 chain
48	1120	256	1120.con	Ovary	g35902 mRNA for ribosomal protein L7
49	1285380	257	1516165CB1	Stomach	g7339519 mRNA for procathepsin E
50	1636639	258	1636639.con	Stomach	g3005731 clone 24747 mRNA sequence
51	1985870	259	1985870.con	Stomach	g8346840 partial LGALS9 gene for galectin 9 exons
52	1677936	260	3665933CB1	Stomach	g31771 mRNA for gastric lipase
53	910612	261	910612.con	Stomach	g38068 Japanese macaque pepsinogen A-2/3
54	2594407	262	807530CB1	Stomach	g1638285 gastricsin mRNA
55	963536	263	963536.con	Stomach	g35706 pS2 mRNA induced by estrogen
56	434377	264	434377.con	Intestine	g599833 VE-cadherin mRNA
57	2121863	265	2121863.con	Intestine	g719268 cysteine-rich heart protein (hCRHP)
58	1597231	266	1597231CB1	Intestine	g1185451 cytochrome P450 monooxygenase
59	4174437	267	4174437.con	Intestine	g181532 defensin 5 gene
60	2182901	268	2182901.con	Intestine	g181546 defensin 6 mRNA
61	1747979	269	1811382CB1	Intestine	g30822 mRNA for diacylglycerol kinase
62	1630553	270	1630553.con	Intestine	g178285 angiotensin I-converting enzyme
63	478960	271	155179CB1	Intestine	g6647301 matriptase mRNA
64	2132487	272	2132487.con	Intestine	g391772 regenerating protein I

TABLE 1

SEQ ID	cDNA	SEQ ID	cDNA	Tissue	Description of GenBank Homolog
65	2921152	273	2921152CB1	Intestine	g971462 mRNA for I-15P (I-BABP)
66	1846428	274	1800311CB1	Intestine	g183414 guanylin mRNA
67	2796143	275	610574CB1	Intestine	g2924619 mRNA for hepatocyte growth factor activator inhibitor type 2
68	1805613	276	1805613.con	Intestine	g1814276 A33 antigen precursor
69	1431273	277	989613CB1	Intestine	g535474 N-benzoyl-L-tyrosyl-p-amino-benzoic acid hydrolase
70	1804662	278	1804662.con	Intestine	g2058317 mRNA for putative carboxylesterase
71	2921194	279	2921194.con	Intestine	g2385451 mRNA for galectin-3
72	395368	280	395368.con	Intestine	g2826520 maltase-glucoamylase
73	2182861	281	1845979CB1	Intestine	g454153 intestinal mucin (MUC2)
74	1806436	282	1751028CB1	Intestine	g187468 P-glycoprotein (PGY1)
75	2922143	283	1501077CB1	Intestine	g36644 si mRNA for sucrase-isomaltase
76	876720	284	3130321CB1	Lung	g190845 receptor for advanced glycosylation end products (RAGE)
77	1910091	285	1910091.con	Lung	g1699037 ABC3 mRNA
78	2174130	286	2174130.con	Lung	g181467 decay-accelerating factor
79	2219077	287	g6580818	Lung	g6580814 indolethylamine N-methyltransferase
80	1965041	288	1965041.con	Lung	g3882236 mRNA for KIAA0758 protein
81	1649959	289	1649959.con	Lung	g186729 mesothelial keratin K7
82	1222317	290	1222317CB1	Lung	g179916 CAPL protein mRNA
83	2510171	291	939088CB1	Lung	g36490 secretory leucocyte protease inhibitor
84	1988674	292	1988674.con	Lung	g190673 pulmonary surfactant-associated prot B
85	1672640	293	1672640.con	Lung	g37946 mRNA for pre-pro-von Willebrand
86	1926543	294	g4884115	Liver	g23875 3-oxoacyl-CoA thiolase
87	1504934	295	1504934.con	Liver	g28560 peroxisomal L-alanine:glyoxylate aminotransferase
88	2512879	296	2512879.con	Liver	g178089 class I alcohol dehydrogenase (ADH1) alpha subunit
89	1359832	297	1359832.con	Liver	g5002378 alcohol dehydrogenase beta2 subunit
90	1583076	298	1583076.con	Liver	g178147 alcohol dehydrogenase class I gamma subunit
91	139838	299	139838CB1	Liver	g178120 class II alcohol dehydrogenase (ADH4)
92	1344654	300	1344654.con	Liver	g219409 mRNA for alpha-2-plasmin inhibitor
93	2513979	301	2513979.con	Liver	g28747 mRNA for apolipoprotein AII prec
94	2369312	302	2369312.con	Liver	g28802 mRNA for precursor of apolipoprotein CI
95	2048364	303	2514629CB1	Liver	g28805 mRNA for lipoprotein apoCII
96	85246	304	85246.con	Liver	g178856 apolipoprotein H

TABLE 1

SEQ ID	cDNA	SEQ ID	cDNA	Tissue	Description of GenBank Homolog
97	166337	305	139825CB1	Liver	g178994 liver arginase mRNA
98	138274	306	138274CB1	Liver	g179078 asialoglycoprotein receptor H1
99	1633340	307	4285165CB1	Liver	g5020419 carbamyl phosphate synthetase I
100	1982416	308	630729CB1	Liver	g180255 ceruloplasmin
101	946822	309	946822.con	Liver	g182389 coagulation factor X
102	2517330	310	2517330.con	Liver	g179721 complement component C8-gamma
103	2516489	311	272669CB1	Liver	g179970 corticosteroid binding globulin
104	88741	312	138361CB1	Liver	g180986 cytochrome P450IIA3 (CYP2A3)
105	168865	313	168865CB1	Liver	g263688 cytochrome P450 2C [Macaca
106	231779	314	271684CB1	Liver	g510085 (clone NF 10) cytochrome P450 nifedipine oxidase
107	234123	315	2513588CB1	Liver	g181394 cytosolic epoxide hydrolase
108	1833801	316	1626663CB1	Liver	g8164183 22kDa peroxisomal membrane p
109	1923613	317	1923613.con	Liver	g6523808 carbonyl reductase mRNA
110	2058620	318	2058620.con	Liver	g7023255 cDNA FLJ10913 fis
111	1930954	319	1963888CB1	Liver	g7023313 cDNA FLJ10948 fis
112	1511658	320	1486348.con	Liver	g182406 fibrinogen alpha subunit
113	2590673	321	2590673.con	Liver	g188630 flavin-containing monooxygenase form II
114	1995380	322	1995380.con	Liver	g183655 glutathione S-transferase
115	167409	323	2078240CB1	Liver	g31675 mRNA for group-specific component
116	1846226	324	1846226.con	Liver	g6759555 mRNA for putative progesterone bp
117	2052185	325	185986CB1	Liver	g184487 hemopexin mRNA
118	2517389	326	085596CB1	Liver	g184391 histidine-rich glycoprotein
119	911015	327	1544305CB1	Liver	g2865608 homogentisate 1,2-dioxygenas
120	604856	328	149832CB1	Liver	g494988 nicotinamide N-methyltransferase
121	1448718	329	1448718.con	Liver	g183117 insulin-like growth factor bp
122	2517268	330	2517268.con	Liver	g33988 mRNA for inter-alpha-trypsin inhibitor
123	167134	331	085011CB1	Liver	g33984 second protein of inter-alpha-trypsin inhibitor complex
124	2843638	332	2843638.con	Liver	g3236285 leptin receptor short form
125	1813269	333	1297817CB1	Liver	g180947 carboxylesterase mRNA
126	1861971	334	2517374CB1	Liver	g24444 mRNA for alpha1-acid glycoprotein (orosomuroid)
127	2005973	335	2005973CB1	Liver	g189410 oxytocin mRNA
128	2515729	336	2515729CB1	Liver	g35896 mRNA for retinol binding protein

TABLE 1

SEQ ID	cDNA	SEQ ID	cDNA	Tissue	Description of GenBank Homolog
129	2132356	337	2132356.con	Liver	g35689 liver mRNA for protein C
130	1001726	338	2614869CB1	Liver	g5834471 mRNA for regucalcin
131	2631845	339	2631845.con	Liver	g1160968 serum amyloid A
132	86390	340	086390CB1	Liver	g337749 serum amyloid A protein
133	1287840	341	2881975CB1	Liver	g432974 sterol carrier protein X
134	2516905	342	g5596369	Liver	g5596369 transferrin receptor 2 alpha
135	606122	343	606122.con	Liver	g36712 mRNA for tyrosine aminotransferase
136	3553733	344	2515740CB1	Liver	g4530276 lipopolysaccharide-binding p
137	1813381	345	1272023CB1	Liver	g36574 mRNA for S-protein
138	1634342	346	1634342.con	Kidney	g2707821 aldehyde reductase (ALDR1)
139	1418871	347	629242CB1	Kidney	g3523100 Ksp-cadherin (CDH16)
140	3766382	348	3766382.con	Kidney	g2708638 carbonic anhydrase precursor
141	943181	349	3485891CB1	Kidney	g521073 mRNA for chloride channel
142	603761	350	3321896CB1	Kidney	g1809239 glycoprotein receptor gp330
143	1297562	351	1297562.con	Kidney	g2213812 podocalyxin-like protein
144	2910715	352	2910715.con	Kidney	g7768681 genomic DNA, chromosome 21q
145	196975	353	1612344CB1	Kidney	g296365 mRNA for propionyl-CoA carboxylase a-chain
146	1453049	354	1453049.con	Kidney	g452649 mRNA for lung amiloride sensitive Na+ channel
147	1968695	355	1881237CB1	Kidney	g339204 (clone V6) transcobalamin II
148	958344	356	3669695CB1	Kidney	g340165 uromodulin (Tamm-Horsfall glycoprotein)
149	254081	357	2776408CB1	Pancreas	g537511 alpha-amylase mRNA
150	1330674	358	1330674.con	Pancreas	g187149 bile salt-activated lipase (BAL)
151	2377834	359	2377834.con	Pancreas	g35329 mRNA for procarboxypeptidase A1
152	2075464	360	1307376CB1	Pancreas	g790226 preprocarboxypeptidase A2
153	2383235	361	4166960CB1	Pancreas	g180885 colipase mRNA
154	1285503	362	g180331	Pancreas	g180331 cystic fibrosis mRNA, CFTR
155	2383205	363	2383205.con	Pancreas	g182057 pancreatic elastase IIA mRNA
156	2015871	364	2015871.con	Pancreas	g607029 elastase III B mRNA
157	2374046	365	2088868CB1	Pancreas	g163497 PDI (E.C.5.3.4.1)
158	1709828	366	1709828.con	Pancreas	g325464 endogenous retrovirus type C oncovirus sequence
159	2061119	367	1515152CB1	Pancreas	g31107 mRNA for elongation factor 2
160	3665105	368	3665105.con	Pancreas	g1244511 pancreatic zymogen granule membrane protein GP-2

TABLE 1

SEQ ID	cDNA	SEQ ID	cDNA	Tissue	Description of GenBank Homolog
161	2068983	369	2068983.con	Pancreas	g893381 mRNA for Reg-related sequence
162	2242648	370	3526170CB1	Pancreas	g7023457 cDNA FLJ11041 fis
163	885032	371	5070239CB1	Pancreas	g187231 pancreatic lipase related prote
164	2383830	372	949518CB1	Pancreas	g190012 phospholipase A-2
165	2085191	373	2085191.con	Pancreas	g521215 pancreatic trypsin 1
166	2792982	374	2792982.con	Pancreas	g3928429 mRNA for trypsinogen IV a-form
167	243123	375	787351CB1	Brain	g1709300 amyloid precursor-like protei
168	382416	376	382416.con	Brain	g182736 cerebellar degeneration-assoc prot
169	1852659	377	1852659.con	Brain	g397934 a2-chimaerin
170	3220181	378	3220181.con	Brain	g251801 glial fibrillary acidic protein
171	1726307	379	1726307.con	Brain	g7669991 mRNA; cDNA DKFp761L0516
172	1904244	380	1904244.con	Brain	Incyte Unique
173	2039955	381	2039955.con	Brain	g600118 extensin-like protein
174	2675641	382	2675641.con	Brain	g189982 testis-specific cAMP-dependent prot kinase catalytic subunit
175	1412749	383	1412749.con	Brain	g6523828 P19 protein mRNA
176	1963854	384	1963854.con	Brain	g9588045 BRI3
177	2949085	385	2949085.con	Brain	g3892873 mRNA for GABA-B R1b receptor
178	2963196	386	2963196.con	Brain	g251801 glial fibrillary acidic protein
179	1505977	387	3493359CB1	Brain	g493133 glutamate receptor 2
180	1674985	388	1674985.con	Brain	g2894085 mRNA for p40
181	2109054	389	2109054.con	Brain	g5689336 mRNA for EB3 protein
182	3317039	390	3317039.con	Brain	g3451335 F22162_1
183	2838551	391	2838551.con	Brain	g4426596 islet-brain 1 mRNA
184	1477568	392	1477568.con	Brain	g4322560 cell-line OV177 DRR1
185	2963871	393	2963871.con	Brain	g2865218 integrin binding protein Del-1
186	1740547	394	2847104CB1	Brain	g1263035 neuronal membrane glycoprot
187	2292011	395	2292011.con	Brain	g1710283 neuronal olfactomedin-related ER localized prot
188	1349484	396	1349484.con	Brain	g3882192 mRNA for KIAA0736 protein
189	1674253	397	1674253.con	Brain	g1665814 mRNA for KIAA0275 gene
190	1932189	398	1932189.con	Brain	g307306 neuroendocrine-specific protein A
191	1403041	399	1558165CB1	Brain	g687589 (AF1q) mRNA
192	1486358	400	1486358.con	Brain	g35958 beta-tubulin gene (5-beta)

TABLE 1

SEQ ID	cDNA	SEQ ID	cDNA	Tissue	Description of GenBank Homolog
193	1439065	401	3869211CB1	Brain	g2645406 calmodulin-stimulated phosphodiesterase PDE1B1
194	530629	402	530629.con	Brain	g1710192 clone 23586 mRNA sequence
195	1672676	403	g559331	Brain	g559331 mRNA for KIAA0080 gene
196	1989129	404	1989129.con	Brain	g1503987 mRNA for KIAA0202 gene
197	1486348	405	1486348.con	Brain	g662277 mRNA for MOBP
198	1397294	406	1397294.con	Brain	g1236938 transcriptional activator mRN
199	2844322	407	2844322.con	Brain	g1927201 FEZ1 mRNA
200	1481440	408	1481440.con	Brain	3' of g1403054???
201	26459	409	026459CB1	Brain	g3290199 peanut-like 2 (PNUTL2) mRNA
202	1406786	410	1406786.con	Brain	g7669991 mRNA; cDNA DKFZp761L0516
203	1485846	411	1485846.con	Brain	g190084 proteolipid protein
204	2153242	412	2153242.con	Brain	g5817080
205	2157981	413	3335607CB1	Brain	g2921407 EEN-B1 mRNA
206	3244361	414	3244361.con	Brain	g31657 GAT1 mRNA for GABA transporter
207	1986737	415	1289007CB1	Brain	g307287 (clone CCG-B7) mRNA sequence
208	2506867	416	1286746CB1	Brain	g35439 mRNA for protein gene product

Table 2

Source No:	Tissue	Age	Ethnicity/Sex	Cause of Death	Conditions or Diseases
122	Ventricle	39	C/M	gunshot wound	
1822	Heart	44	C/M	intracranial hemorrhage	
B7015	Heart				
6986	Skeletal Muscle	23	A/M	accident	type II diabetes
376	Tibia	41	C/F	NA	cancer
4071	Thigh	64	C/F	NA	
6987	Uterus	45	A/F	accident	
6988	Uterus	49	A/F	accident	
1119	Ovary	47	C/F	NA	
6989	Stomach	59	A/F	accident	
6990	Stomach	45	A/M	accident	
6991	Sm Intestine	57	A/F	accident	
6392	Colon	69	A/F	accident	
3779	Lung	13	C/M	intracranial hemorrhage	
2881	Lung	1.1	C/F	drowning	
2152	Lung	12	C/M	accident	ADD, hyperactivity
4209	Liver	56	C/F	NA	cancer
4133	Liver	60	C/M	NA	cancer
2147	Liver	8	C/F	closed head injury	diabetes, asthma
6993	Kidney	72	A/M	accident	
6994	Kidney	26	A/M	accident	
6995	Kidney	46	A/M	accident	
6996	Pancreas	24	A/M	accident	
6997	Spleen	28	A/M	accident	
6998	Spleen	33	A/M	accident	
6999	Brain	27	A/M	accident	
7000	Brain	23	A/M	accident	
3971	Striatum	78	C/M	NA	Alzheimer's

Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
2380381	1.38	1.32	2.04	0.77	-0.26	-0.14	-0.93	-1.00	-0.38	-0.38	-0.38	-0.26	0.14	0.26	-0.85
1618422	1.14	1.14	1.38	-1.58	-1.38	-1.43	0.58	0.68	-0.26	-0.26	-0.68	0.38	0.68	0.14	-0.26
2672064	2.23	2.17	1.58	-0.26	-0.58	-0.68	0.58	0.58	-0.85	-0.38	0.00	-0.58	-0.68	-0.38	0.49
608361	2.70	1.89	1.68	0.68	0.38	-0.14	0.93	0.58	-0.77	0.58	0.26	0.26	0.14	-0.14	0.00
1922596	1.72	1.81	1.49	1.85	1.07	0.68	-2.00	-2.10	-1.93	-1.20	-0.49	-1.00	-1.00	-0.77	-1.85
1850033	1.26	4.06	1.00	-1.00	-0.85	-1.14	-1.49	-1.81	-2.07	-1.68	-1.89	-1.68	-2.23	-2.04	-1.85
986987	3.83	3.20	2.93	-2.07	-1.26	-1.93	-2.38	-2.32	-2.66	-2.04	-2.81	-2.68	-2.77	-2.70	-2.23
718807	2.79	3.39	3.25	-1.14	-0.85	-1.00	-1.63	-1.68	-1.14	-0.93	-1.63	-1.38	-1.20	-1.77	-0.85
2880435	1.96	1.68	2.29	-0.77	-0.49	-0.77	0.14	0.14	-0.58	-0.49	-0.38	-0.26	0.00	-0.49	-0.14
187326	3.87	3.14	3.69	-0.58	-0.26	-0.38	-2.49	-1.96	-2.49	-2.56	-2.46	-2.79	-2.66	-2.66	-2.04
1997963	2.61	2.23	1.81	2.81	1.38	1.54	-1.63	-1.72	-1.63	-1.20	-1.07	-1.14	-1.43	-1.07	-1.68
467700	3.42	3.14	2.89	1.20	1.89	1.20	0.00	-0.77	-2.23	0.14	-1.14	-0.38	-1.54	-1.26	-1.85
57382	2.66	2.17	2.46	3.05	2.00	1.81	-2.63	-2.17	-2.51	-2.00	-1.85	-2.35	-2.23	-2.20	-2.96
1222442	2.29	1.63	1.93	2.14	1.32	0.85	-1.85	-1.96	-1.85	-0.58	-0.49	-0.14	-0.85	-0.14	-1.49
4013105	3.45	2.32	2.77	1.63	1.58	1.26	-1.00	-0.58	-1.93	-2.70	-2.07	-2.81	-3.00	-2.98	-1.93
924319	3.54	3.12	2.63	0.58	2.43	-1.26	-3.38	-3.55	-3.43	-3.66	-3.85	-3.67	-3.95	-4.05	-1.43
1645119	2.79	2.43	1.81	0.85	1.38	2.07	-1.14	-1.07	-1.07	-1.49	-0.93	-0.93	-1.00	-0.85	-1.00
1379925	3.17	2.98	2.46	2.23	2.61	2.54	-1.93	-1.54	-2.00	-2.20	-1.54	-2.04	-2.14	-2.20	-1.54
1900961	1.54	2.89	2.38	1.63	0.85	1.68	0.77	0.49	-1.54	-0.68	-1.72	-0.26	-0.85	-0.58	-2.04
3506985	2.35	1.72	1.93	1.07	2.43	1.63	-2.46	-2.56	-2.85	-1.32	-1.14	-0.93	-1.20	0.38	0.00
551403	2.29	1.26	0.49	1.07	1.07	0.77	1.07	1.38	-0.58	0.00	0.14	-2.23	-1.72	-0.93	-1.68
3948420	2.29	1.20	0.58	1.26	1.14	0.93	1.07	1.43	-0.68	0.14	0.26	-2.14	-2.38	-1.00	-1.77
1722853	2.38	1.68	2.20	-0.58	0.00	-1.20	-0.85	-0.77	1.54	0.00	-0.14	-0.93	-0.93	-0.77	-0.77
1557490	1.89	2.04	1.54	-1.43	-1.38	-1.63	0.00	0.14	-1.72	-0.93	-1.07	-2.43	-2.17	-1.58	-1.26
3208425	0.93	1.14	0.38	3.34	1.49	2.29	-0.93	-0.85	-1.20	-0.68	-1.00	-0.68	-0.58	-0.38	-1.43
1668474	1.00	0.00	0.77	3.07	3.19	2.61	-1.49	-1.07	-1.14	-0.85	-1.14	-1.72	-1.43	-1.77	-1.38
1622542	-0.38	-0.58	-0.77	1.81	1.43	1.93	-0.85	-1.14	-1.00	-0.58	-0.77	0.00	-0.49	-0.38	-1.07
4014318	-0.14	0.26	-1.14	3.32	2.96	2.70	0.14	0.00	0.00	-0.26	-0.26	-0.49	-0.38	-0.49	0.00
2394888	-1.26	-1.20	-1.81	2.98	3.17	2.81	-1.43	-1.20	-1.26	-1.43	-1.63	-1.68	-1.43	-1.58	-0.49
1345550	-3.61	-3.90	-3.99	3.10	4.50	3.32	-3.46	-2.85	-4.09	-3.81	-4.06	-4.25	-3.84	-4.41	-3.36



Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
1719955	-0.26	0.49	-0.26	4.05	2.04	2.61	-2.72	-2.58	-2.51	-2.20	-2.49	-2.72	-2.32	-2.38	-1.96
2256026	-0.14	-0.14	-0.85	2.49	2.66	2.79	-0.26	-0.26	-0.49	-0.85	-0.85	-0.68	-0.68	-0.93	-0.26
1538086	-0.38	0.00	0.00	2.23	1.26	1.85	-1.20	-1.14	-1.00	-0.68	-1.14	-0.77	-0.93	-1.26	-1.14
958633	0.93	1.14	1.49	2.26	1.58	1.43	0.58	0.68	0.93	-0.26	-0.58	-0.68	-0.38	-0.26	-0.38
2635943	-2.20	-1.26	-2.04	4.00	2.91	2.98	-2.79	-2.58	-3.19	-2.29	-3.23	-3.17	-2.41	-3.10	-3.28
121888	-1.68	-1.72	-1.54	2.93	3.38	2.85	-3.60	-3.36	-3.42	-3.22	-3.38	-4.01	-3.90	-4.44	-2.98
1627492	0.00	0.26	0.14	2.41	2.07	2.20	0.00	-0.14	0.68	-0.58	-0.58	-0.58	0.00	-0.38	-1.14
4073867	0.85	0.49	0.26	2.35	1.38	1.68	-0.38	-0.38	0.00	-0.26	-0.26	-0.14	0.00	0.14	-0.85
2190170	0.49	0.49	0.38	2.93	2.14	2.38	0.68	0.58	0.68	0.00	-0.14	-0.14	0.00	0.14	0.26
972224	-2.26	-1.68	-3.56	4.73	3.29	3.26	-2.81	-2.81	-3.32	-2.72	-3.34	-3.54	-3.72	-3.61	-3.17
1413644	-0.14	0.00	-0.58	2.83	2.10	1.96	-0.85	-0.14	-1.58	-0.58	-1.63	-0.85	-0.93	-1.20	-1.89
1538224	0.68	1.77	1.07	1.89	2.07	1.38	0.14	-0.14	-0.26	-0.58	-0.93	-0.58	-0.38	-0.68	0.26
2623268	-0.58	0.14	-0.58	1.43	1.38	1.93	0.38	0.58	-0.26	0.58	-0.26	-0.85	-0.58	-0.49	-1.14
1665533	0.58	0.49	0.26	1.89	2.20	1.63	-0.14	-0.14	-0.26	-0.58	-0.38	-0.77	-0.26	-0.26	-0.14
981484	-0.77	-0.77	-0.58	1.72	1.85	2.17	-1.20	-1.20	-1.26	-0.58	-0.85	-0.93	-0.93	-1.14	-0.85
973629	-1.68	-0.85	-2.32	4.27	3.51	3.31	-2.87	-2.83	-3.09	-2.61	-2.72	-2.89	-2.96	-3.10	-3.41
1539638	-1.07	-0.49	-0.58	1.49	1.26	1.20	0.26	0.26	0.14	-0.26	-0.38	-0.14	0.00	-0.14	-0.49
3015758	-1.49	-1.68	-2.77	4.54	3.86	2.94	-2.63	-2.63	-2.58	-2.58	-2.49	-3.23	-2.66	-3.25	-2.20
2832314	0.85	0.85	0.38	2.58	1.72	0.93	-0.14	0.00	-0.26	-0.26	-0.26	-0.38	-0.38	-0.14	-0.26
1702996	-0.38	0.00	-0.26	2.00	2.00	2.10	1.07	0.77	-0.49	-0.14	0.49	-0.49	-0.14	-0.38	-0.68
839947	0.14	-0.38	-1.26	2.38	1.63	2.10	-1.58	-1.32	-1.72	-0.68	-0.38	-0.68	-0.77	-0.85	-0.68
1867522	-3.29	-2.10	-4.61	4.66	4.18	3.50	-4.88	-4.94	-5.17	-3.94	-3.90	-5.26	-4.37	-5.05	-3.88
1987831	0.14	-0.14	0.14	1.54	1.32	1.43	-0.26	-0.14	x	-0.38	-0.68	-0.38	-0.58	-0.77	-0.85
2639708	-1.72	-2.20	-1.58	3.41	3.17	3.45	-2.63	-2.61	-3.02	-2.72	-2.98	-2.49	-2.91	-2.89	-2.61
973815	-1.63	-2.26	-1.43	3.12	3.15	3.77	-2.58	-2.72	-3.02	-3.12	-2.98	-3.22	-3.66	-3.60	-2.41
169884	2.23	1.81	1.00	3.69	3.57	3.81	-2.07	-2.17	x	-1.32	-1.72	-1.54	-1.38	-2.26	-1.43
2638235	1.85	1.68	1.63	1.85	1.63	2.23	-1.00	-1.07	-1.32	-0.38	-0.14	-1.14	-1.20	-1.00	0.00
305198	2.89	1.32	1.85	2.85	2.66	2.68	-1.43	-1.93	-2.26	-1.14	-1.54	-1.68	-2.07	-2.00	-1.07
57997	1.14	1.77	0.58	3.92	2.85	3.50	-0.68	-0.93	-1.32	-0.58	-0.14	-1.43	-1.54	-1.63	-1.20
986558	2.68	2.41	2.04	3.25	2.35	2.23	-0.93	-0.93	-1.26	-1.32	-0.77	-1.58	-1.49	-1.54	-1.38

Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
224996	1.63	-0.26	-0.68	3.29	3.23	2.98	0.58	-0.26	-2.20	-0.26	-1.26	-1.20	-1.58	-1.20	-1.77
661259	1.49	1.63	1.14	2.54	1.07	1.26	-1.00	-0.85	-1.32	-0.58	-0.49	-1.00	-1.14	-0.93	-1.54
3246379	0.85	2.00	0.14	3.00	1.68	2.63	-1.00	-1.07	-1.68	-1.14	-1.26	-1.38	-1.26	-1.43	-1.43
78783	1.81	0.77	0.93	1.43	2.32	1.49	-0.26	-0.26	-0.38	-0.14	0.14	-0.77	-0.26	-0.38	-0.14
2639181	1.93	2.32	2.00	4.22	2.68	3.07	-4.95	-4.87	-4.92	-5.22	-5.50	-5.00	-4.69	-4.86	-5.02
1672467	2.35	2.17	2.17	3.02	3.28	3.29	-1.38	-1.43	-2.49	-2.00	-2.17	-1.96	-2.23	-2.43	-2.38
2950063	0.77	0.77	0.49	2.85	3.23	2.77	-2.70	-2.72	-2.74	-2.72	-3.28	-4.06	-3.87	-4.41	-2.51
3288518	-0.85	-0.77	-1.85	4.15	4.26	3.61	-4.18	-4.19	-4.67	-4.65	-4.98	-6.14	-5.37	-5.49	-3.80
184110	2.72	-0.26	2.20	2.89	2.96	3.12	-4.28	-4.19	-4.49	-3.09	-3.93	-5.09	-4.13	-4.43	-3.83
1368173	1.26	0.93	0.85	2.70	1.93	1.77	-1.14	-1.00	-0.77	-1.43	-1.58	-1.43	-1.58	-1.54	-1.32
1813409	1.32	1.32	1.07	2.87	2.00	2.10	-1.14	-1.43	-1.96	-0.26	0.38	-0.93	-1.00	-0.49	-1.43
58309	1.96	2.14	1.68	3.10	3.94	3.81	-4.02	-4.19	-4.11	-2.43	-2.74	-3.61	-3.62	-2.89	-3.31
1721744	1.85	1.89	1.54	2.17	2.00	1.49	0.14	0.49	-0.26	-0.77	-0.26	-0.85	-0.58	-0.77	-1.00
1924344	0.00	-0.14	-0.68	3.42	3.54	2.74	1.07	0.26	-1.26	-0.14	-1.00	-0.49	-1.00	-0.93	-1.81
3176845	-0.14	-0.58	-1.00	2.98	2.81	2.83	1.63	1.63	-0.49	0.38	-1.38	-0.49	-1.20	-0.85	-2.23
2286809	0.26	1.63	0.58	3.17	2.93	3.02	-2.32	-1.89	-1.85	-0.93	-1.54	-0.77	-1.81	-0.68	-2.38
1985244	1.26	0.26	0.00	3.52	2.66	2.63	-0.85	-0.77	-0.26	-0.77	-1.20	-0.85	-0.93	-0.38	-1.07
1570042	-0.14	0.26	-0.38	2.51	1.68	1.54	-0.85	-0.93	-1.07	-1.00	-1.32	-1.68	-1.20	-1.32	-1.14
2079906	-1.63	-1.07	-1.68	-1.20	-1.14	-1.32	2.10	2.14	0.58	0.77	-0.85	0.85	0.49	0.58	-0.38
2852042	-1.68	-1.54	-2.23	-1.49	-2.07	-2.20	2.93	2.68	0.14	1.49	-0.14	0.85	0.14	0.26	-0.85
1319020	2.07	1.43	0.77	0.68	0.26	0.00	2.04	2.07	0.93	0.00	-0.58	-1.07	-0.38	-0.49	-0.93
1572555	1.38	0.77	0.77	1.14	0.68	0.68	1.96	1.58	0.00	0.85	-0.68	1.00	0.26	0.77	-1.54
782235	-1.32	-1.32	-1.89	-1.58	-2.04	-1.32	3.23	2.70	1.68	0.14	-1.07	-1.07	-1.14	-0.58	-0.38
1314882	0.00	-0.26	-0.49	-0.58	-0.49	-0.68	2.61	2.66	1.72	0.49	-0.85	-0.26	-0.26	0.00	0.58
1403636	-1.00	-0.26	-0.93	0.77	0.14	0.49	1.81	1.85	1.58	1.00	-0.49	0.38	-0.14	0.00	-0.68
1968921	0.00	-0.26	-0.26	-0.26	-0.68	-0.26	1.58	1.77	1.38	0.26	-0.49	0.14	-0.26	0.14	-0.58
1558081	0.38	0.00	0.14	0.38	-0.58	-0.49	2.23	1.81	1.32	0.49	0.00	-0.49	-0.38	0.38	0.14
2495131	1.00	0.26	0.00	1.20	1.85	1.00	2.51	2.66	2.14	0.49	-0.58	0.00	-0.38	0.14	0.14
4049957	-1.68	-1.49	-2.98	-1.49	-2.46	-2.32	3.39	3.14	1.14	1.20	-0.38	0.85	0.00	0.26	-1.00
1686585	-1.14	-0.38	-0.77	0.58	0.26	0.26	2.07	2.43	2.07	0.26	0.14	-1.00	-0.93	-0.58	-1.96

Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
2696735	-0.49	-1.07	-2.23	-1.77	-2.38	-2.38	3.22	2.81	-0.77	1.54	0.14	0.77	0.14	0.14	-2.56
1720149	-2.38	-1.38	-2.54	-1.85	-1.96	-2.04	2.77	2.79	0.49	1.32	0.00	1.32	1.07	0.77	-0.85
1866751	-2.23	-1.20	-2.49	-1.26	-1.20	-1.43	3.14	2.87	-0.49	2.10	0.14	1.96	1.20	1.20	-1.85
1851696	0.26	1.00	0.77	-0.38	-0.49	-0.49	2.04	2.79	1.00	1.14	0.26	1.32	0.77	1.38	1.54
93820	-1.77	-2.54	-2.14	-2.23	-1.85	-2.14	2.68	1.68	-1.68	-2.41	-2.43	-2.38	-2.26	-2.32	-2.29
2368282	-0.93	-1.14	-0.26	-0.68	-0.38	-0.58	-0.49	-0.77	3.64	-0.26	-0.93	-0.68	-0.85	-0.85	-0.58
2831248	0.00	0.00	0.00	0.00	0.00	-0.14	1.14	1.32	2.49	0.26	0.38	-0.26	-0.14	0.38	0.14
182802	-0.58	-0.68	-1.26	-0.58	-0.26	-0.93	-1.20	-1.07	3.54	0.00	-0.58	0.00	0.85	0.26	-1.07
1003884	0.14	0.26	0.49	-1.14	-0.26	-0.93	1.32	1.14	1.49	0.00	0.00	-0.14	0.14	0.38	0.77
1120	-0.38	0.00	0.14	0.49	0.38	0.38	0.58	1.14	2.23	0.14	0.14	-0.38	0.00	0.38	0.00
1308542	1.49	1.20	1.20	-0.49	-0.58	-0.68	-0.77	-1.07	1.32	0.49	0.14	-0.38	-0.68	-0.68	-0.26
3820761	0.58	0.00	1.07	0.77	-0.68	-0.38	1.54	1.43	2.23	0.14	-0.49	-0.77	-0.26	0.26	-0.38
1999167	0.14	0.26	-0.58	-1.77	-1.38	-1.81	1.20	1.49	1.38	0.38	-0.26	-0.38	0.00	0.00	-0.85
1522716	-0.14	0.00	-0.58	-0.14	-0.26	-0.49	2.07	2.04	3.04	0.14	0.14	-0.38	-0.58	0.14	0.38
1612969	-0.58	-0.77	-0.26	-0.77	-0.85	-0.85	0.26	-0.14	2.83	-0.68	-1.00	-1.00	-1.38	-1.00	-1.14
337500	-0.77	-0.68	-1.32	-0.85	-1.20	-1.26	1.07	1.38	2.54	0.49	0.58	0.14	0.14	0.58	-0.14
1285380	-0.68	-0.58	0.14	-0.58	-0.77	-0.68	-0.58	-0.58	-0.85	1.85	1.96	-0.14	-0.58	-0.49	0.14
1636639	0.77	0.49	0.93	-0.85	-0.38	-0.77	0.85	0.58	-0.68	1.49	2.46	0.49	0.49	0.49	0.00
1985870	-0.58	-0.58	-0.49	-0.68	-0.58	-0.85	-0.49	-0.58	-0.68	1.68	1.96	0.58	0.38	0.93	0.38
1677936	-5.83	-5.86	-5.13	-5.28	-4.60	-5.10	-5.38	-5.17	-5.33	3.82	3.64	-1.68	-5.19	-4.80	-4.85
910612	4.84	-5.09	-3.51	-4.35	-3.98	-4.44	-4.75	-4.59	-4.54	3.89	3.67	-1.20	-5.17	-4.04	-4.45
2594407	-4.89	-5.01	-5.62	-4.76	-4.32	-4.56	-5.20	-5.08	-5.38	4.19	3.51	-1.26	-5.17	-4.45	-2.49
963536	-3.20	-2.96	-1.85	-2.74	-2.23	-2.70	-3.00	-3.12	-3.26	3.10	3.45	-1.32	-1.49	-2.10	-2.61
2252895	-0.93	-0.38	-2.14	-0.68	-0.14	-1.20	-1.54	-1.77	-1.81	3.12	3.38	1.85	1.72	1.72	-1.07
2804190	-0.58	-0.77	-0.49	-0.68	-0.49	-0.49	-0.68	-0.49	-0.49	2.00	1.58	1.26	1.63	1.14	-0.14
1998428	-2.74	-2.70	-2.46	-2.17	-1.32	-2.04	-2.46	-2.46	-2.38	3.00	3.26	0.38	1.07	0.85	-0.85
1800114	-2.20	-2.14	-2.32	-2.32	-1.38	-1.93	-1.85	-1.93	-2.04	1.58	1.26	0.85	1.54	1.81	-0.58
1806769	-1.68	-1.68	-2.29	-1.07	-0.68	-1.54	-1.81	-1.68	-1.54	2.04	2.35	0.38	1.63	1.96	0.68
2474163	-1.26	-1.07	-1.77	-0.26	-0.49	-1.00	-2.29	-2.00	-1.77	1.72	2.49	-1.93	-1.63	-2.04	-1.26
1435374	-2.41	-2.29	-3.04	-2.66	-2.23	-2.66	-2.63	-2.29	-1.49	1.14	1.38	0.58	0.85	1.20	0.26

Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
434377	-0.14	-0.58	0.14	-0.26	0.26	-0.49	-0.38	-0.14	-1.00	-1.00	-1.20	1.68	2.00	2.32	0.77
2121863	-0.26	-0.26	-0.26	0.00	0.14	-0.58	1.14	0.85	-0.26	0.85	1.14	2.38	2.10	2.43	1.14
1597231	1.72	1.32	0.93	0.77	1.07	0.14	-1.38	-1.32	x	-0.38	-0.77	1.58	1.81	1.72	-0.85
4174437	-4.32	-4.47	-4.21	-3.47	-3.17	-3.47	-4.28	-3.74	-3.93	-1.89	-4.63	2.63	3.31	3.25	-3.07
2182901	-3.98	-4.10	-3.56	-3.02	-2.20	-3.22	-3.45	-3.25	-3.86	-1.89	-4.50	2.66	3.62	3.61	-3.09
1747979	-0.58	-0.49	-1.32	-0.77	-0.38	-0.68	0.26	0.14	-0.26	0.49	0.38	1.81	1.54	1.72	0.00
1630553	-1.14	-0.77	-1.54	-0.93	-0.85	-1.07	-1.20	-0.58	-1.96	-1.20	-1.63	3.12	2.98	3.00	-0.77
478960	-0.58	-0.85	-1.07	-0.49	-0.26	-0.58	-1.00	-0.77	-1.07	0.58	0.38	1.49	1.81	1.72	0.00
2132487	0.00	-0.58	-1.20	0.14	-0.14	-0.38	-0.77	-1.07	-1.00	0.49	-0.38	2.17	2.61	2.68	-0.38
2921152	-2.79	-3.04	-3.02	-2.81	-2.29	-2.68	-3.56	-3.19	-3.23	-2.49	-2.87	2.35	3.60	2.91	-2.93
1846428	-1.96	-1.77	-2.79	-0.77	-0.26	-0.68	-1.26	-1.38	-1.49	-1.77	-2.14	3.22	3.31	3.26	-1.20
2796143	-0.14	-0.93	-1.68	-1.43	-1.38	-1.77	-1.72	-1.89	-0.38	0.49	0.68	1.07	1.54	1.43	0.77
1805613	-0.38	-0.85	-1.85	0.00	0.14	-0.38	-0.85	-0.77	-0.85	0.00	-0.85	2.54	3.05	2.98	-0.49
1431273	-1.72	-1.96	-2.00	-1.85	-1.38	-2.26	-2.32	-2.56	-2.32	-1.38	-1.89	2.66	3.07	2.94	-1.68
1804662	-0.14	-0.49	-1.26	-0.77	-0.49	-1.00	-1.26	-1.14	-1.07	-0.38	-0.77	1.54	2.07	1.93	-1.58
2921194	-0.38	-0.14	0.00	-0.49	-0.85	-1.07	0.58	0.68	0.85	0.38	0.77	1.81	2.04	1.96	0.14
395368	-2.32	-2.23	-3.51	-2.14	-1.85	-2.10	-2.56	-2.49	-2.35	-1.38	-1.49	2.81	3.51	3.09	-1.54
2182861	0.14	0.00	-0.85	0.00	0.26	-0.14	-0.38	-0.26	-0.38	-0.26	-0.49	1.81	2.14	2.10	-0.58
1806436	-0.38	-1.07	-0.77	-1.26	-0.93	-1.00	-0.58	-0.38	x	-1.00	-1.07	1.89	2.14	1.81	-0.68
2922143	-1.68	-2.07	-3.32	-2.61	-2.43	-2.89	-3.36	-3.19	-3.56	-1.07	-1.96	2.63	3.39	3.41	-3.00
1696001	-0.26	-1.07	-0.77	-1.07	-1.20	-1.20	-1.49	-1.38	-1.77	-0.26	-1.00	2.38	2.81	2.26	-1.07
1635004	-2.41	-2.61	-3.55	-2.38	-1.77	-2.17	-2.96	-2.72	-2.61	1.32	0.93	2.68	3.10	3.09	-1.68
2132752	-2.10	-2.26	-3.68	-2.04	-1.07	-1.85	-2.07	-1.77	-1.38	1.54	2.32	2.29	3.09	3.38	-1.20
1734393	-2.91	-2.93	-3.23	-2.94	-2.00	-2.63	-3.29	-3.02	-2.58	1.32	0.58	2.17	2.72	2.72	-2.72
4179338	-3.46	-3.09	-4.82	-4.71	-4.26	-4.49	-4.97	-5.31	-5.16	-2.63	-4.98	2.26	3.26	2.56	-4.09
1427623	-1.54	-1.93	-2.04	-1.96	-1.32	-1.93	-2.23	-1.81	x	-0.38	-2.49	2.26	3.05	2.41	-1.89
3320987	-2.10	-2.17	-2.07	-2.00	-1.77	-2.29	-0.49	-0.38	-2.54	-2.35	-2.51	2.26	2.68	2.93	-2.46
2239819	-1.68	-1.77	-2.68	-1.20	-1.07	-1.26	-2.23	-2.14	-2.20	-1.72	-2.10	2.41	2.56	2.72	-1.85
876720	-0.68	-0.77	-1.07	-0.77	-0.77	-0.85	-0.77	-0.93	-1.00	-0.93	-1.07	-1.00	-0.58	-1.00	2.98
1910091	-0.14	-0.49	-0.93	0.00	-0.38	-0.38	-0.38	-0.49	-0.85	-0.68	-0.68	-0.49	-0.49	-0.58	1.85

Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
2174130	-0.49	0.00	-0.58	0.00	0.00	0.00	0.26	0.00	1.14	0.68	1.07	0.26	0.26	0.58	1.49
2219077	0.26	0.38	0.26	-0.49	-0.26	-0.38	-0.26	0.14	0.00	-0.14	-0.58	-0.14	-0.14	-0.58	1.43
1965041	0.93	0.85	0.93	0.14	0.85	0.00	0.38	0.77	-0.49	-0.77	-0.38	-1.07	-0.77	-0.85	1.77
1649959	-1.26	-1.20	-2.10	-0.77	-0.49	-0.68	-1.14	-1.20	-1.54	0.14	0.49	0.00	0.26	0.00	2.35
1222317	-0.26	-0.14	0.14	0.26	-0.26	-0.38	0.68	0.26	-1.07	0.14	0.00	0.00	-0.14	0.26	1.96
2510171	-1.68	-1.43	-0.26	-1.20	-0.77	-1.20	-1.63	-1.81	-1.85	0.14	0.00	-1.14	-1.32	-1.49	2.35
1988674	-1.32	-1.07	-1.54	-1.26	-0.58	-1.26	-0.85	-1.07	-1.20	-0.77	-0.68	-0.26	-0.68	-0.68	2.17
1672640	2.35	1.38	0.58	0.58	0.58	0.38	1.00	1.07	0.49	-0.14	-0.49	-0.77	-0.85	0.00	1.72
1749417	-1.72	-1.26	-1.77	-2.04	-1.93	-1.85	-0.58	-1.14	-0.85	-0.26	-0.14	-1.07	-0.58	-0.68	1.81
1926543	0.26	-0.14	-0.14	-0.58	-0.49	-0.77	-0.68	-0.93	-0.58	-0.26	-0.14	0.00	0.14	0.00	-0.14
1504934	-1.81	-1.89	-1.77	-1.38	-1.07	-1.58	-2.00	-1.81	-1.63	-1.89	-2.61	-2.35	-2.04	-2.46	-1.77
2512879	-1.68	-1.32	-1.14	-0.93	-0.93	-1.38	-1.00	-1.00	-1.20	0.00	0.14	-0.58	-0.38	0.00	0.14
1359832	-1.81	-1.32	-0.85	-1.54	-2.17	-1.81	-1.20	-1.14	-1.43	-0.26	-0.77	-1.32	-0.38	-0.38	-0.26
1583076	-1.58	-1.26	-0.77	-1.26	-1.72	-1.43	-1.26	-1.20	-1.43	0.49	0.26	-0.26	-0.14	0.14	-0.38
139838	-2.14	-2.32	-2.68	-2.43	-2.20	-2.87	-3.15	-3.36	-2.61	-2.14	-2.68	-3.17	-2.23	-2.74	-2.26
1344654	-1.54	-1.38	-0.68	-1.00	-0.85	-1.00	-1.00	-1.32	-1.20	-1.32	-1.32	-1.00	-1.43	-1.14	-0.26
2513979	-3.35	-3.52	-2.32	-2.38	-1.81	-2.63	-3.04	-2.77	-2.66	-2.38	-3.41	-3.41	-3.42	-3.19	-2.49
2369312	-3.05	-3.23	-3.20	-2.72	-1.89	-2.38	-2.87	-2.68	-1.20	-3.23	-2.63	-3.96	-3.56	-3.39	-0.58
2048364	-3.12	-3.17	-3.42	-2.61	-2.26	-2.66	-4.00	-3.71	-3.61	-3.09	-3.72	-3.57	-2.23	-3.32	-2.54
85246	-4.17	-4.22	-4.89	-4.26	-3.35	-3.95	-4.65	-4.50	-4.18	-3.61	-4.53	-4.99	-4.37	-4.80	-3.79
166337	-1.32	-1.68	-2.20	-1.00	-0.85	-1.20	-0.93	-1.20	-1.20	-0.85	-1.32	-1.72	-1.00	-1.58	-0.26
138274	-0.38	-0.58	-1.00	-0.26	-0.26	-0.38	-0.85	-0.68	-0.85	-0.77	-0.77	-0.93	-0.58	-0.85	-0.58
1633340	-1.20	-1.58	-0.58	-1.32	-1.43	-1.68	-1.68	-1.85	-1.77	-1.00	-1.58	0.49	0.58	0.49	-1.68
1982416	0.00	-0.68	-0.26	-1.07	-1.20	-1.38	-1.38	-1.96	-1.72	-0.49	-0.85	-0.68	-1.07	-0.68	-0.68
946822	-0.26	0.14	0.14	-0.14	-0.14	0.00	0.00	-0.49	0.26	-0.26	-0.58	-0.26	-0.14	0.00	-0.49
2517330	0.00	-0.26	0.14	-0.26	-0.85	-0.49	-0.68	-0.85	-0.85	-0.14	-0.38	0.26	0.14	0.14	-0.14
2516489	-0.14	-1.14	-1.20	-0.93	-0.58	-0.93	-1.20	-1.00	-1.20	-1.00	-1.20	-0.93	-0.85	-1.26	-0.49
88741	-1.26	-1.32	-1.14	-1.14	-1.26	-1.14	-1.81	-1.63	-1.32	-1.63	-2.17	-2.00	-1.49	-2.04	-1.20
168865	-1.43	-1.68	-1.68	-2.04	-1.77	-2.26	-2.63	-2.35	-2.54	-0.85	-0.77	-0.93	-1.32	-0.85	-1.49
231779	-0.93	-0.85	-1.00	-1.26	-0.77	-1.20	-0.68	-1.00	-0.77	-0.26	-0.49	0.38	0.00	0.14	-1.00

Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
234123	0.14	-0.26	0.26	-0.93	-1.07	-1.07	-1.32	-1.26	-1.07	-0.49	-0.93	0.26	0.26	0.26	-0.85
1833801	0.58	-0.26	0.14	0.68	0.68	0.49	-0.14	-0.26	x	-0.14	0.68	0.77	0.93	1.07	0.00
1923613	0.14	-0.14	-0.38	0.26	0.26	0.00	-0.93	-1.07	-0.26	-0.38	-0.49	-1.07	-1.00	-1.00	0.14
2058620	0.77	0.38	0.93	1.07	0.38	0.14	-0.68	-0.38	0.00	-0.49	-0.77	-0.49	-0.68	-0.14	-0.93
1930954	0.58	-0.14	0.49	0.68	0.49	0.38	0.00	-0.26	x	0.00	0.00	0.38	0.38	0.38	-0.58
1511658	-4.14	-4.22	-4.73	-4.17	-3.78	-4.20	-4.55	-4.81	-4.56	-3.94	-2.74	-4.96	-4.56	-4.85	-4.44
2590673	-0.77	-1.00	-0.68	-1.00	-1.07	-1.32	-1.49	-1.43	-1.32	-0.26	-1.00	-1.49	-1.14	-1.58	-0.93
1995380	-1.49	-1.54	-0.93	-1.58	-1.38	-1.43	-1.07	-1.68	0.26	-0.14	-0.26	-0.38	-0.49	0.26	0.93
167409	-3.54	-3.75	-4.34	-3.31	-3.42	-3.63	-3.83	-3.84	-3.36	-1.81	-2.46	-4.39	-3.17	-3.69	-3.61
1846226	-1.54	-1.14	-1.32	-1.43	-1.07	-1.58	0.26	0.38	0.77	0.00	-0.14	0.14	0.38	0.68	-0.49
2052185	-3.02	-3.09	-4.51	-2.81	-2.41	-2.89	-3.31	-3.19	-3.42	-3.49	-3.94	-3.57	-2.85	-3.55	-3.28
2517389	-1.32	-1.81	-0.85	-1.32	-1.54	-1.72	-1.85	-1.93	-1.85	-1.32	-1.32	-1.54	-1.89	-1.72	-1.58
911015	-1.00	-1.20	-1.43	-0.77	-0.49	-0.77	-0.85	-1.00	-0.77	-0.49	-0.38	-0.38	-0.14	-0.14	0.00
604856	-1.14	-0.26	-0.58	-1.07	-0.77	-1.54	-1.26	-1.68	-1.32	-1.00	-0.14	-1.68	-1.85	-1.20	-0.58
1448718	-2.49	-2.10	-2.89	-1.72	-0.77	-2.32	-2.14	-1.43	-1.68	-0.68	-2.66	-2.58	-1.58	-2.04	-1.72
2517268	-1.07	-1.49	-1.68	-1.26	-1.38	-1.54	-2.07	-1.89	-2.10	-1.43	-1.54	-1.93	-1.81	-1.96	-1.68
167134	-0.49	-1.00	-1.26	-1.49	-1.68	-1.81	-2.41	-2.20	-2.38	-0.93	-1.14	-1.68	-1.43	-1.89	-1.96
2843638	0.26	-0.38	0.14	-0.58	-0.26	-0.38	-0.14	-0.14	0.77	0.00	0.00	-0.14	-0.26	-0.26	0.49
1813269	-1.81	-1.43	-2.00	-2.58	-1.85	-1.93	-0.14	-0.49	-2.10	-1.54	-2.38	-1.43	-1.00	-0.49	0.49
1861971	-4.31	-4.39	-4.51	-4.11	-3.86	-3.91	-4.55	-4.07	-4.36	-3.88	-4.02	-5.78	-4.69	-5.18	-3.34
2005973	-0.14	-1.14	-1.43	-1.72	-1.38	-1.00	-1.77	-1.77	-1.93	-0.26	0.00	-0.77	-0.58	0.26	-1.38
2515729	-2.58	-2.79	-2.10	-2.20	-2.10	-2.54	-2.85	-2.89	-3.23	-2.66	-2.58	-2.43	-2.74	-2.07	-2.32
2132356	-0.77	-0.77	-1.49	-0.26	0.00	-0.38	-0.85	-0.68	x	-0.68	-1.07	-1.14	-0.77	-0.93	-0.58
1001726	-0.38	-0.38	-0.77	-0.68	-0.26	-0.68	-0.38	-0.58	x	-0.77	-0.49	-1.00	-1.00	-1.32	0.38
2631845	-2.77	-2.35	-1.96	-1.96	-0.38	-2.07	-2.10	-2.46	-2.46	-1.38	-1.58	-2.00	-2.46	0.14	-0.38
86390	-0.85	-0.58	-1.89	-0.93	-0.14	-0.85	-0.68	-1.07	-0.77	-0.68	-0.77	-1.38	-1.20	-1.07	-0.26
1287840	-0.26	-0.14	0.38	-0.26	-0.38	-0.38	-0.26	-0.14	0.14	0.26	-0.14	0.38	0.49	0.49	-0.26
2516905	0.26	-0.49	-0.77	-0.38	-0.68	-0.58	-0.93	-1.14	-1.32	-0.49	-0.26	-0.49	-0.93	-0.77	-0.58
606122	-1.20	-1.43	-0.77	-1.20	-1.32	-1.43	-1.49	-1.77	-1.58	-0.68	-1.38	-0.85	-1.26	-1.20	-1.14
3553733	-0.85	-0.68	-2.20	-0.26	-0.38	-0.58	-1.49	-1.32	-1.54	-1.20	-0.68	-1.20	-0.85	-1.26	-0.58

Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
1813381	0.14	-1.20	-2.20	-1.77	-1.38	-1.81	-2.23	-2.17	-1.81	-2.20	-2.49	-2.70	-2.29	-2.83	-2.43
1988108	-1.58	-0.85	-1.00	-1.07	-0.85	-1.00	0.77	1.20	1.96	-0.38	-0.49	-0.68	-0.49	-0.26	0.00
1644648	-1.81	-1.81	-1.93	-1.38	-0.58	-1.20	-1.68	-1.49	1.32	-0.26	0.00	1.32	0.58	1.49	-1.07
2516104	-2.61	-2.94	-2.56	-2.23	-2.04	-2.10	-2.79	-2.77	-2.43	-2.32	-3.28	0.14	2.00	0.85	-2.58
2516448	-1.38	-1.43	-0.38	-0.58	-0.77	-0.38	-1.26	-1.26	-1.32	-1.63	-1.77	0.49	1.54	0.77	-1.07
2514507	-3.82	-3.36	-1.93	-1.72	-1.43	-1.89	-2.14	-2.26	-2.20	-2.46	-3.07	-0.68	0.77	0.68	-2.17
1427470	-0.68	-1.20	-0.68	-0.77	-1.07	-1.20	-1.14	-1.49	0.58	0.14	0.38	1.49	1.20	1.58	0.00
1311471	-1.49	-2.23	-2.20	-1.81	-0.77	-1.07	-1.14	-1.07	-1.32	-1.20	-1.63	0.49	0.93	1.00	-1.14
195142	-2.32	-2.51	-3.54	-2.07	-1.96	-2.17	-3.10	-2.66	-2.77	-0.38	-0.14	0.49	0.14	0.68	-2.56
29598	-3.63	-3.43	-4.39	-3.32	-2.20	-3.25	-3.14	-3.41	-2.35	-0.85	-0.68	1.00	1.26	1.32	-2.43
1968576	-1.43	-1.49	-1.49	-0.93	-1.14	-1.38	-1.49	-1.68	-1.38	0.00	0.00	1.58	1.14	1.07	0.38
2959255	-2.35	-1.93	-0.93	-1.20	-1.20	-1.26	-0.14	-0.14	0.68	-0.77	-1.43	1.26	1.20	1.58	-0.77
446969	-2.26	-2.29	-3.20	-3.02	-2.74	-2.81	-3.23	-3.22	-3.35	-1.43	-1.20	0.14	0.77	0.77	-0.85
1631511	-2.14	-2.20	-3.25	-2.23	-2.04	-2.35	-2.85	-2.58	-2.26	-1.14	-2.23	1.63	1.63	1.85	-1.14
1508741	-2.14	-2.38	-2.68	-2.10	-1.72	-2.20	-2.98	-2.96	-2.17	-2.41	-2.83	-3.55	-2.10	-3.10	0.14
2513602	-1.14	-1.49	-1.85	-1.43	-1.26	-1.58	-1.63	-1.77	-2.00	-1.93	-1.63	-1.72	-2.23	-2.29	-1.81
1981145	-1.20	-1.77	-1.20	-1.85	-1.07	-1.68	-1.43	-1.32	-1.63	-1.58	-1.63	-0.26	0.00	0.14	-1.68
2103752	-1.26	-1.07	-0.68	-1.63	-1.32	-1.77	-1.32	-1.43	0.14	-0.26	-0.58	0.38	0.00	0.14	0.38
2658782	-2.10	-2.14	-2.26	-2.58	-1.81	-2.66	-3.20	-2.91	x	-1.93	-2.14	-0.14	-0.49	0.00	-2.00
2099420	-1.00	-1.32	-1.00	-1.32	-1.26	-1.58	-1.85	-2.07	-2.07	-1.43	-1.72	-0.93	-1.20	-1.43	-1.14
637639	-2.04	-1.96	-1.77	-2.14	-1.43	-1.81	-2.04	-2.10	-1.96	-1.89	-1.93	-2.85	-1.96	-2.72	-1.07
279249	-2.29	-2.46	-2.43	-2.70	-2.58	-2.89	-3.29	-3.09	-2.81	-2.46	-3.12	-3.25	-2.56	-3.61	-2.85
1379063	-1.77	-1.93	-3.19	-1.58	-0.85	-1.68	-1.58	-1.63	-1.38	-0.93	-0.77	-0.77	-0.14	-0.26	-0.58
89747	-2.26	-2.49	-3.25	-2.72	-2.07	-2.41	-2.93	-2.98	-3.04	-2.54	-2.94	-2.98	-2.29	-3.22	-2.49
2515873	-1.49	-1.43	-2.10	-1.07	-1.26	-1.89	-1.54	-1.38	-1.54	-1.93	-1.96	-2.17	-1.89	-2.04	-2.07
1432372	-1.07	-1.38	-2.14	-1.32	-1.00	-1.26	-1.81	-1.72	-1.58	0.58	0.26	0.38	0.58	0.85	0.38
1633719	-2.51	-3.07	-2.81	-2.72	-2.23	-2.61	-3.09	-3.47	-3.05	-2.81	-2.49	-0.26	-0.38	-0.49	-2.43
1712663	-0.93	-1.26	-1.38	-1.43	-1.00	-1.26	-1.14	-1.38	-1.07	-0.85	-0.49	-1.07	-1.00	-1.54	0.00
4285203	-0.93	-0.93	-2.07	0.58	1.20	0.58	-0.77	-0.68	-1.54	-1.38	-1.07	-0.68	-0.58	-0.68	-0.77
1634342	-0.93	-0.77	-1.32	-1.20	-0.77	-1.58	-0.93	-0.58	-0.38	0.26	-0.38	0.26	0.93	0.77	0.00

Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
1418871	-0.77	-1.07	-0.58	-0.58	-0.38	-0.77	-0.93	-1.07	-1.26	-1.14	-0.93	-1.26	-1.07	-1.14	-0.38
3766382	-1.54	-1.07	-1.49	-1.43	-0.85	-1.43	-0.14	-0.26	-1.14	-0.38	-0.58	-0.38	-0.77	-0.58	-1.00
943181	-0.58	-0.85	-1.07	-0.77	-0.77	-0.77	-1.20	-1.20	-1.20	-1.07	-1.07	-1.26	-1.07	-1.32	-0.85
603761	-1.54	-1.54	-2.63	-1.49	-0.58	-1.68	-1.81	-1.93	x	-1.07	-1.68	-2.04	-1.81	-1.96	-1.32
1297562	0.14	0.00	0.49	-1.58	-0.58	-1.07	-0.14	0.93	-0.77	-1.38	-1.89	-1.96	-1.32	-1.81	0.93
2910715	-0.93	-1.43	-0.85	-1.00	-1.00	-1.14	-1.49	-1.26	-1.85	-0.26	0.58	-1.38	-1.26	-1.49	0.38
196975	0.49	0.38	0.00	-0.14	0.14	-0.26	-0.49	-0.26	x	0.00	0.00	-0.14	-0.14	0.00	-0.14
1433049	0.00	-0.68	-1.77	-0.68	-0.38	-1.07	-1.14	-1.00	x	0.93	1.07	0.14	0.38	0.38	0.85
1968695	-0.49	-1.00	-0.58	-0.93	-0.49	-0.49	0.00	-0.26	-0.38	-0.26	-0.49	1.14	1.00	1.58	0.00
958344	-3.12	-2.98	-2.35	-3.28	-2.74	-3.26	-3.86	-3.68	-3.68	-3.14	-3.29	-3.63	-3.67	-3.68	-3.42
2820985	-1.68	-1.72	-2.70	-1.85	-1.00	-2.07	-2.10	-2.14	-1.49	-0.68	-2.20	1.00	1.72	1.49	-1.93
1633393	-0.58	-1.00	-0.49	-1.63	-1.07	-1.54	-1.07	-1.14	-0.49	-0.77	-0.77	1.20	1.14	1.38	-0.77
1806451	-1.00	-1.26	-1.26	-0.49	-0.58	-0.77	-0.58	0.00	-1.14	-0.77	-0.85	1.54	1.00	1.72	-1.38
2674772	-2.61	-2.66	-3.34	-2.66	-1.77	-2.46	-2.74	-2.79	-2.68	-2.29	-2.14	0.93	0.85	1.14	-2.35
1376121	-1.32	-1.07	-1.14	-1.43	-1.00	-1.26	-1.68	-1.38	-1.26	-0.26	-0.38	-1.38	-0.93	1.20	1.20
831794	-0.38	-0.58	-0.85	0.26	0.00	0.00	-1.54	-1.32	-1.58	-1.00	-1.32	-1.81	-1.63	-1.77	-1.00
1427681	-1.81	-1.89	-2.38	-1.85	-0.49	-1.58	-2.04	-1.68	-1.38	-2.00	-2.10	-2.56	-1.96	-2.07	-1.38
2912830	-2.74	-2.74	-2.89	-3.05	-1.77	-2.83	-3.50	-3.51	-2.23	-2.14	-2.77	-3.57	-2.77	-3.23	-2.83
504786	-1.81	-1.54	-2.14	-2.17	-1.32	-2.04	-2.38	-2.07	-2.38	-1.14	0.00	-2.43	-2.10	-2.04	-1.93
254081	-4.79	-4.94	-4.26	-4.38	-4.55	-4.51	-5.28	-5.28	-4.89	-4.94	-5.26	-5.93	-5.60	-6.02	-4.73
1330674	-3.60	-3.75	-4.04	-4.61	-3.77	-3.58	-4.28	-4.34	-4.68	-4.32	-4.25	-5.29	-4.38	-4.87	-3.52
2377834	-5.75	-5.97	-5.94	-4.49	-4.96	-5.05	-5.74	-5.57	-5.88	-6.13	-6.05	-6.26	-6.14	-6.31	-5.19
2075464	-4.33	-4.61	-3.75	-3.87	-3.31	-3.77	-4.12	-3.96	-4.41	-3.09	-2.41	-4.27	-4.13	-4.38	-3.88
2383235	-4.67	-4.87	-5.39	-4.49	-3.78	-3.68	-4.18	-4.34	-4.97	-4.93	-4.93	-5.76	-5.41	-5.76	-3.89
1285503	-1.43	-1.96	-2.63	-1.49	-0.85	-1.58	-2.07	-2.07	-1.89	-0.85	-1.81	-0.49	-0.26	-0.14	-0.58
2383205	-4.72	-4.93	-5.25	-4.34	-3.87	-4.28	-4.78	-4.69	-4.66	-4.78	-5.03	-5.41	-4.96	-5.29	-4.29
2015871	-5.04	-4.90	-2.89	-3.85	-3.09	-3.98	-4.15	-4.12	-4.36	-4.66	-4.98	-4.65	-5.10	-4.88	-4.22
2374046	-0.77	-0.93	0.49	-0.93	-1.26	-1.20	-1.32	-1.58	-1.49	-0.93	-1.20	-0.58	-0.93	-1.00	-0.58
1709828	-0.68	-0.58	-0.85	-1.07	-0.49	-0.85	-0.58	-0.58	0.85	0.58	0.49	0.38	0.68	0.49	0.49
2061119	0.49	0.26	0.49	1.07	1.26	0.93	1.32	1.32	1.54	0.49	-0.14	0.49	-0.14	0.58	-0.68



Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
3665105	-2.41	-2.56	-4.06	-2.98	-2.87	-3.32	-3.45	-3.63	-3.75	-3.00	-3.25	-2.61	-2.66	-2.87	-3.00
2068983	-3.15	-3.34	-4.01	-3.38	-2.94	-3.09	-3.23	-3.36	-3.14	-2.70	-2.89	-3.14	-1.63	-2.17	-2.85
2242648	-3.02	-2.85	-2.43	-3.05	-2.77	-2.35	-3.05	-2.79	-3.02	-3.31	-3.19	-3.41	-3.00	-3.02	-2.72
885032	-2.00	-2.14	-1.26	-2.51	-1.85	-2.49	-2.58	-2.56	-2.85	-1.96	-1.77	-2.56	-2.04	-2.07	-2.54
2383830	-5.43	-5.44	-5.52	-4.50	-1.85	-4.12	-4.47	-4.74	-4.47	-4.29	-5.38	-5.48	-4.98	-5.38	-3.79
2085191	-6.27	-6.31	-5.57	-6.41	-5.71	-5.49	-6.36	-6.35	-6.11	-5.93	-6.41	-5.34	-5.04	-4.61	-5.96
2792982	-6.01	-5.87	-3.51	-5.27	-4.52	-4.69	-5.09	-5.16	-5.05	-4.81	-5.17	-3.92	-3.79	-3.29	-5.18
179929	1.38	2.20	1.20	-1.58	-1.89	-2.00	-1.93	-1.32	-1.89	0.68	0.93	0.77	1.26	1.43	-1.20
2741788	-1.58	-1.26	-1.07	-1.93	-1.58	-1.85	-0.26	0.00	0.93	-0.14	0.00	0.26	0.00	0.85	-1.81
2373608	-3.91	-4.35	-2.74	-2.83	-2.72	-3.43	-3.22	-3.09	-3.99	-0.77	-0.26	-2.29	-2.38	-2.14	-2.89
2182095	-3.43	-3.74	-2.61	-3.12	-2.61	-3.25	-3.45	-3.23	-4.02	0.38	-1.26	1.14	1.58	2.56	-3.35
2923150	-6.10	-6.51	-5.69	-5.68	-4.84	-5.13	-5.71	-5.82	-5.80	-1.81	-2.14	-2.46	-0.68	-0.68	-5.13
293495	-0.14	-1.32	-1.77	-2.49	-1.93	-2.41	-2.43	-3.05	-1.00	-1.00	-0.58	-2.04	-2.56	-2.17	-1.32
4284270	-1.20	-1.54	-2.23	-1.07	-0.85	-1.26	-1.49	-1.49	-1.77	-1.68	-1.77	-1.72	-1.54	-1.81	-0.85
958923	-0.77	-0.77	-1.00	-1.07	-0.77	-1.07	-0.58	-0.77	-0.58	-0.68	-0.68	-0.68	-1.07	-0.77	-0.26
1921393	-2.66	-2.72	-2.74	-2.87	-1.85	-2.87	-1.14	-1.20	-2.51	1.38	2.07	-2.00	-1.58	-1.54	-2.14
1447866	-0.38	-0.49	-0.38	-0.38	-0.38	0.00	0.00	-0.14	-0.38	0.49	0.77	0.14	0.49	0.38	0.68
1666737	-0.68	-1.00	-1.68	-0.68	-0.26	-0.49	-0.14	-0.38	-0.93	0.14	0.49	0.14	0.49	0.49	1.07
586245	-1.14	0.00	-1.32	-0.85	-0.58	-0.68	1.38	1.20	-0.68	-0.68	-0.49	-0.58	-0.49	0.00	-1.07
194162	-1.38	-1.38	-3.02	-1.72	-0.38	-1.26	-1.93	-1.72	-1.81	2.46	2.38	-0.77	0.93	2.20	-0.77
243123	-1.32	-1.20	-2.54	-1.63	-1.32	-1.32	-1.77	-1.63	-1.93	-1.26	-0.68	-1.49	-1.26	-1.32	-2.07
382416	-1.49	-0.68	-0.93	-0.93	-0.93	-0.93	-0.77	-0.77	-0.77	-1.54	-2.66	-3.04	-1.89	-2.26	-1.07
1852659	-1.58	-1.93	-0.58	-1.77	-1.77	-2.20	-1.96	-1.85	-2.17	-2.00	-2.29	-1.58	-1.68	-1.96	-1.72
3220181	-0.38	-0.93	-0.85	-0.68	-0.85	-1.00	-0.77	-0.38	-0.14	-0.14	-0.68	1.14	1.32	1.20	-1.00
1726307	-0.93	-1.14	-1.07	0.26	0.49	0.14	0.00	-0.38	0.14	-0.58	-0.14	-1.20	-0.77	-0.85	-0.77
1904244	0.00	-0.14	-0.49	0.14	0.26	0.00	-0.14	-0.49	0.26	-0.58	-0.49	-0.38	0.14	-0.49	-0.14
2039955	-1.00	-1.07	-1.68	-0.93	-0.49	-0.68	-1.20	-1.00	-1.26	-1.32	-1.00	-1.63	-0.77	-1.38	-0.85
2675641	-1.14	-0.68	-1.00	-1.77	-0.93	-1.43	-0.14	-0.38	-0.38	-0.26	-0.68	-0.77	-0.85	-0.93	-1.38
1412749	-0.14	-0.85	-0.14	-0.85	-0.93	-1.00	-1.14	-1.32	-1.54	-0.49	-0.38	-0.14	-0.58	-0.58	-0.93
1963854	-0.49	-0.58	-1.26	-1.00	-0.85	-1.26	0.00	0.14	-0.26	0.26	-0.14	0.68	0.49	1.07	-0.93

Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
2949085	0.14	0.00	-0.38	-0.49	-0.77	-0.85	0.26	0.26	0.00	-0.49	-0.38	-0.93	-0.49	-0.77	-0.68
2963196	-0.68	-1.00	-2.00	-1.00	-1.00	-1.32	-1.58	-1.77	-1.89	-1.07	-1.49	-1.38	-1.49	-1.68	-2.14
1505977	-1.26	-1.00	-2.20	-1.77	-1.58	-1.68	-1.20	-0.68	-1.77	-1.20	-1.89	-2.49	-1.49	-2.38	-1.68
1674985	0.38	-0.14	0.26	-0.58	-0.68	-0.77	-0.58	-0.49	-0.38	-0.77	-1.00	-0.49	-0.49	-0.77	-0.77
2109054	0.58	0.68	-0.38	1.26	1.58	0.85	0.14	0.14	0.14	-0.58	-0.85	-1.43	-0.93	-1.43	-0.85
3317039	-0.49	-0.49	-1.43	-0.26	-0.26	-0.38	-0.38	-0.26	-0.14	-0.26	-0.38	-0.85	-0.58	-0.93	-0.77
2838551	-0.38	-0.68	-0.49	-0.68	-0.58	-0.68	-0.26	-0.58	-0.68	-0.58	-0.77	-0.49	-0.93	-0.77	-0.58
1477568	-0.26	-0.14	-0.49	-1.00	-0.58	-1.38	-1.00	-1.32	-1.77	-1.00	-1.14	-2.00	-1.81	-1.00	-1.77
2963871	-0.77	-0.49	-0.38	-0.68	-0.38	-0.77	0.49	0.68	0.00	-0.26	-0.26	-0.58	0.14	0.00	0.00
1740547	-1.07	-0.85	-1.00	-1.32	-1.07	-1.07	-1.00	-1.20	-1.26	-0.85	-0.93	-2.54	-0.77	-0.85	-1.00
2292011	-1.14	-1.32	-1.96	-1.96	-1.43	-2.04	-1.85	-1.49	-2.32	-1.38	-2.04	-2.54	-1.77	-2.46	-1.43
1349484	-0.14	0.00	-0.77	0.14	0.49	0.00	0.26	0.14	x	-0.58	-0.26	-0.49	-0.38	-0.26	0.00
1674253	-0.77	-0.68	-1.07	-0.68	-0.49	-0.68	-1.20	-1.07	-0.85	-0.85	-0.93	-0.85	-0.68	-0.77	0.38
1932189	-1.43	-1.81	-1.77	-2.20	-2.04	-2.46	-2.77	-2.68	-2.91	-1.72	-2.04	-2.10	-2.00	-2.00	-2.74
1403041	0.77	-0.26	-1.20	0.00	0.26	-0.68	0.14	-0.26	-0.93	-0.68	-0.85	-1.14	-0.85	-1.00	-0.38
1486358	-1.00	-1.00	-1.38	-1.77	-1.72	-2.23	-1.63	-1.20	-1.07	-1.32	-1.58	-1.89	-1.58	-1.43	-1.72
1439065	0.38	0.00	0.14	-0.38	-0.49	-0.14	-0.58	-0.49	x	-0.14	-0.38	-0.26	0.14	-0.26	0.00
530629	-0.26	-0.38	-1.72	-0.26	0.00	-0.38	-0.58	-0.93	x	-0.68	-1.00	-0.93	-0.14	-0.58	-0.14
1672676	-1.20	-1.07	-1.54	-1.81	-1.63	-1.58	-0.93	-0.85	-1.00	-1.32	-1.81	-1.89	-1.32	-1.68	-1.81
1989129	-1.00	-0.49	-1.43	-1.07	-0.85	-1.14	-0.38	-0.26	-0.58	-0.58	-0.38	-0.77	-0.58	-0.49	-0.68
1486348	-2.58	-2.17	-2.77	-1.00	-0.85	-1.58	-1.14	-1.00	-1.07	-1.68	-1.96	-1.81	-1.81	-1.81	-1.20
1397294	-0.58	-1.00	-1.63	-0.85	-0.26	-0.49	-1.00	-0.68	-1.43	-0.68	-0.49	-1.49	-1.07	-0.68	-0.26
2844322	-1.26	-0.68	-1.26	-1.32	-1.38	-1.49	-0.68	-0.77	-1.20	-1.26	-1.81	-1.85	-1.49	-1.85	-1.00
1481440	-0.93	-0.85	-2.10	-0.38	-0.26	-0.58	-1.07	-0.77	0.00	-1.07	-1.32	-1.20	-0.93	-1.20	-0.58
26459	0.14	-0.58	-0.14	-1.14	-1.43	-1.49	-1.68	-1.58	-1.63	-1.00	-1.20	-1.43	-1.49	-1.49	-1.00
1406786	-1.32	-1.00	-0.77	0.14	-0.26	-0.14	-0.14	-0.49	-0.38	-0.68	-0.58	-1.14	-0.93	-1.07	-0.58
1485846	-4.60	-4.04	-4.43	-4.69	-4.13	-4.34	-3.92	-4.04	-4.36	-4.25	-4.69	-4.26	-3.79	-4.02	-4.72
2153242	-1.68	-1.96	-1.93	-1.72	-1.26	-1.72	-1.85	-1.93	-2.10	-1.49	-1.54	-0.93	-1.20	-1.00	-1.26
2157981	-0.77	-1.85	-1.85	-2.00	-1.20	-1.81	-2.10	-1.07	-1.38	-1.49	-1.20	-2.07	-1.63	-1.93	-1.68
3244361	-1.00	-0.49	-1.26	-0.49	-0.38	-0.58	-0.68	-0.68	-1.00	-0.77	-0.85	-1.20	-0.85	-0.93	-1.00

Table 3

Clone ID	Ventricle (122)	Heart (1822)	Heart (B7015)	Skeletal Muscle (6986)	Tibia (376)	Thigh (4071)	Uterus (6987)	Uterus (6988)	Ovary (1119)	Stomach (6989)	Stomach (6990)	Small Intest (6991)	Small Intest (6991)	Colon (6392)	Lung (3779)
1986737	-1.32	-0.49	-1.07	0.68	0.26	-0.14	-1.26	-0.77	-1.96	-1.63	-2.10	-1.54	-1.54	-1.20	-1.63
2506867	-2.38	-1.49	-3.04	-1.49	-1.00	-2.04	-2.07	-0.77	-0.49	-2.41	-2.61	-2.04	-1.58	-1.81	-2.07
1211682	1.38	0.85	0.68	-1.96	-1.54	-2.04	-1.81	-1.85	-1.14	-1.26	-1.43	-0.49	-0.38	-0.49	-2.10
1416354	2.10	0.49	1.32	-1.43	-0.93	-1.58	-1.00	-0.85	-1.43	-1.54	-1.63	-1.20	-1.00	-1.14	-1.38
2963962	1.20	0.77	0.68	-1.07	-0.38	-1.20	0.68	1.49	-0.38	-0.58	-0.93	-0.93	-0.85	-0.68	-1.43
1761086	0.14	0.14	-0.49	0.49	0.00	0.14	-1.93	-2.00	-2.26	-0.14	-0.26	0.68	0.93	0.93	-1.54
2588552	-0.77	-0.77	-2.29	1.00	0.26	0.38	-1.89	-1.89	-1.77	-0.49	-0.85	-1.85	-1.00	-1.77	1.20
1901271	-1.38	-1.00	-1.89	-2.63	-2.17	-2.07	-1.43	-1.43	-0.68	-0.93	-0.77	0.14	0.77	0.68	-0.68
1740924	-0.14	-0.58	-0.49	-0.68	-0.85	-0.85	-1.14	-1.26	-1.00	-0.58	-0.58	-0.68	-0.77	-1.20	-0.68
1480159	-1.68	-1.58	-2.04	-1.00	-0.93	-1.00	-1.93	-1.54	-1.77	-1.77	-1.63	-1.77	-1.20	-1.32	-1.38

Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
2380381	-0.93	-0.77	0.68	1.07	0.58	1.00	0.49	0.77	-1.00	-1.00	-1.26	-0.49	-0.77	-0.93	-1.07
1618422	-0.14	0.00	-1.38	-1.63	-1.14	-1.49	-1.38	-1.43	-0.49	-0.14	-0.14	-0.49	0.26	0.77	-0.49
2672064	0.14	0.26	-1.38	-1.32	-1.89	0.00	0.00	0.38	-1.77	-0.49	-1.32	0.00	0.58	0.14	0.14
608361	0.14	0.00	-0.38	-0.68	-0.14	-1.00	-0.77	-1.14	0.93	0.14	0.00	-0.26	-0.85	-1.14	-0.68
1922596	-1.93	-1.77	1.26	1.81	0.49	0.85	0.26	0.49	-1.58	-1.63	-2.10	-1.38	1.32	0.58	-0.14
1850033	-2.79	-2.38	-3.05	-2.66	-2.14	-2.51	-2.32	-2.77	-2.14	-2.26	-2.20	-2.23	-2.14	-2.83	-2.23
986987	-2.91	-2.51	-2.93	-2.85	-2.70	-2.91	-2.93	-3.07	-2.77	-3.00	-2.35	-2.38	-3.15	-3.38	-2.72
718807	-1.58	-1.54	-1.32	-2.07	-1.58	-2.49	-1.93	-2.10	-0.58	-1.81	-1.38	-1.77	0.49	0.26	0.38
2880435	-0.49	-0.58	-0.68	-0.77	-0.49	-0.14	-0.26	0.00	-0.58	-0.68	0.00	-0.14	-0.38	0.26	0.26
187326	-2.85	-2.91	-2.43	-2.66	-2.72	-3.00	-3.75	-2.83	-2.32	-2.56	-2.89	-2.49	-3.22	-3.25	-2.20
1997963	-1.68	-1.63	-2.32	-1.58	-2.04	0.00	-0.77	-0.49	-1.68	-2.58	-2.63	-1.89	-0.26	-1.00	-1.14
467700	-2.07	-2.54	-2.43	-2.38	-2.14	-2.41	-2.35	-2.41	-1.96	-2.29	-2.07	-1.81	-3.17	-2.61	-1.89
57382	-3.57	-3.51	-3.51	-3.45	-3.20	-1.63	-2.43	-2.20	-3.19	-3.66	-3.12	-3.29	-1.43	-2.14	-1.85
1222442	-2.04	-1.77	-0.68	0.26	0.49	0.93	0.38	0.68	-1.26	-1.32	-1.58	-1.00	0.14	-0.58	-0.77
4013105	-3.05	-2.81	-3.25	-3.15	-2.85	-0.26	-1.20	-0.85	-2.83	-1.38	-2.68	-0.93	-0.58	-1.32	-1.81
924319	-0.68	-2.51	-4.03	-4.03	-3.39	-4.17	-4.19	-4.38	-3.68	-3.96	-3.69	-3.68	-4.45	-4.63	-4.08
1645119	-1.38	-1.38	-0.77	-0.68	-0.68	-0.85	-0.77	-1.00	-1.00	-1.26	-1.07	-0.85	-0.38	-1.20	-0.93
1379925	-2.29	-2.17	-1.93	-1.81	-1.72	-1.58	-1.58	-1.96	-2.10	-0.93	-1.68	-1.54	-1.54	-2.14	-1.43
1900961	-2.46	-2.56	-2.29	-2.00	-1.93	-1.85	-1.96	-1.81	-1.96	-2.70	-1.89	-1.89	-1.85	-2.29	-2.58
3506985	-0.68	-0.58	-1.93	-1.63	-2.54	-2.54	-2.77	-2.43	-2.43	0.85	0.14	2.77	-3.12	-3.45	-2.49
551403	-1.58	-1.58	-1.43	-2.23	-1.26	-1.20	-1.77	-1.81	-0.26	-2.00	-1.43	-1.81	1.38	1.00	0.68
3948420	-1.49	-1.93	-2.81	-2.94	-2.74	-1.54	-2.17	-2.23	-0.49	-2.87	-2.23	-2.61	1.38	1.26	0.85
1722853	-0.38	-0.26	-1.20	-0.26	-1.14	-0.38	-0.38	-0.14	-1.26	-1.58	-1.32	-1.49	-0.38	-0.26	-0.26
1557490	-1.85	-1.77	-2.85	-2.23	-2.81	-1.07	-1.32	-1.00	-1.93	-0.58	-1.68	-0.58	1.58	1.20	0.38
3208425	-1.32	-1.32	-2.23	-2.14	-1.89	-0.26	-0.77	-0.14	-1.77	-1.93	-2.46	-1.20	0.68	0.38	-0.49
1668474	-1.89	-1.58	-1.68	-1.68	-1.58	-2.14	-1.72	-1.77	-1.20	-1.54	-1.14	-1.20	-0.68	-1.26	-0.93
1622542	-0.85	-1.14	-0.85	-1.32	-1.20	-1.07	-0.58	-1.32	-0.77	-0.38	0.14	-0.49	1.00	1.07	0.49
4014318	-0.85	-0.68	-0.85	-0.49	-0.26	-0.68	-0.93	-0.68	-0.26	0.00	-0.58	0.14	-1.20	-1.49	-0.49
2394888	-0.77	-0.38	-0.14	0.14	-1.20	0.77	-0.38	-0.26	-1.81	-1.07	-1.07	-1.43	0.68	0.68	1.07
1345550	-3.17	-4.25	-3.83	-4.33	-4.10	-4.68	-4.63	-4.57	-4.39	-4.19	-4.04	-3.35	-4.71	-4.69	-3.69

Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
1719955	-1.54	-1.49	-1.77	-1.54	-0.77	-1.14	-1.32	-0.85	-3.10	-2.83	-3.12	-2.29	-0.49	-1.14	-1.26
2256026	-1.14	-1.20	-0.85	-1.14	-0.14	-1.38	-1.20	-0.85	-0.26	-0.68	-0.93	-0.38	-1.20	-1.20	-0.68
1538086	-1.32	-1.43	1.26	1.14	1.20	-0.14	0.14	-0.26	0.00	-1.20	-1.00	-1.00	0.00	-0.14	-0.68
958633	-0.38	-0.26	-0.77	-0.38	-0.58	0.14	0.14	0.49	0.49	-0.77	-0.58	-0.38	0.49	-0.26	-0.14
2635943	-3.87	-3.41	-3.60	-3.23	-3.20	-3.74	-3.86	-3.28	-3.74	-3.52	-3.31	-3.26	-2.93	-3.39	-2.66
121888	-4.15	-4.26	-3.83	-3.81	-3.15	-4.05	-4.01	-3.94	-3.78	-3.54	-3.93	-4.04	-3.31	-4.38	-3.91
1627492	-0.77	-0.68	-0.93	-1.07	-1.20	-0.26	-0.58	0.00	-1.00	-1.07	-1.26	-0.38	0.26	-0.26	-0.26
4073867	-1.00	-1.07	1.26	1.49	1.93	1.32	0.49	0.58	-0.49	-0.58	-0.93	-0.14	-0.77	-1.07	-0.38
2190170	-0.38	0.00	-1.14	-0.68	-0.58	0.14	-0.26	0.00	-0.77	-0.38	-0.58	0.38	0.38	0.00	0.38
972224	-4.20	-4.10	-4.26	-4.05	-3.93	-3.80	-4.39	-4.26	-4.39	-3.87	-4.34	-3.85	-4.71	-5.00	-3.80
1413644	-2.35	-1.89	-2.17	-2.04	-2.46	-1.49	-2.17	-1.43	-2.10	-2.20	-1.63	-1.58	1.43	0.68	-0.58
1538224	0.26	-0.14	0.00	-0.26	0.14	-0.14	-0.38	0.38	-0.58	-0.93	-0.58	-0.38	-0.38	-0.49	-0.26
2623268	-1.32	-0.85	-2.29	-1.93	-1.81	-0.58	-1.20	-0.38	-2.14	-1.26	-1.49	-0.93	0.49	-0.26	-0.38
1665533	0.00	0.14	-1.07	-0.49	-1.00	0.00	-0.26	0.26	-0.49	-0.26	-0.49	0.26	-0.38	-0.77	-0.14
981484	-1.26	-1.07	-1.26	-1.26	-0.68	-1.14	-1.00	-1.32	-0.77	-0.85	-0.77	-1.20	-0.77	-0.85	-0.38
973629	-3.31	-3.32	-3.70	-3.35	-3.35	-3.25	-3.49	-3.26	-3.32	-2.66	-3.42	-2.51	-3.20	-4.17	-2.85
1539638	-0.38	-0.38	-1.77	-1.49	-1.54	-0.14	-0.58	-0.26	-1.58	-1.00	-1.26	-0.58	-0.14	-0.58	-0.58
3015758	-3.22	-3.25	-2.83	-2.85	-2.51	-3.22	-3.12	-3.47	-1.77	-2.72	-2.68	-2.10	-3.20	-3.55	-2.35
2832314	-0.14	0.14	-2.70	-2.96	-2.91	0.85	0.49	1.00	-2.14	-0.58	-1.00	-0.26	1.43	0.93	0.58
1702996	-0.77	-0.58	-1.58	-1.26	-1.43	-0.58	-1.20	-0.58	-0.93	-1.32	-1.72	-0.58	-0.38	-0.77	-0.49
839947	-0.58	-0.49	-0.49	-0.85	-0.58	-1.00	-0.58	-0.93	-0.77	-0.49	-0.58	-0.68	0.14	0.00	0.14
1867522	-4.10	-4.34	-3.61	-3.78	-3.91	-4.43	-4.30	-4.25	-4.59	-3.86	-4.21	-4.21	-3.80	-4.64	-3.64
1987831	-0.68	-0.58	-1.14	-1.49	-1.00	-1.20	-0.77	-0.93	x	-0.58	-0.38	-0.49	1.54	1.32	0.26
2639708	-3.31	-3.17	-3.32	-2.98	-3.04	-3.32	-3.12	-3.34	-2.72	-2.94	-2.70	-2.63	-2.70	-3.52	-2.72
973815	-3.93	-3.90	-4.11	-4.15	-3.56	-4.03	-3.75	-4.36	-3.51	-2.81	-3.96	-3.47	-3.42	-4.02	-2.79
169884	-2.14	-2.43	-1.63	-1.72	-1.54	-2.43	-2.41	-2.56	x	-1.77	-1.54	-1.54	-1.32	-1.43	-0.85
2638235	-0.68	-0.58	-1.20	-1.26	-0.93	-0.93	-0.77	-1.07	-0.93	-1.72	-1.20	-1.14	-1.20	-1.49	-1.68
305198	-2.14	-2.26	-2.00	-2.07	-1.77	-2.14	-2.41	-2.35	-1.72	-1.43	-2.14	-1.96	-2.07	-1.89	-1.07
57997	-1.96	-2.04	-1.58	-1.77	-1.26	-1.58	-1.77	-1.49	-0.93	-1.68	-1.38	-1.32	-2.10	-2.04	-1.07
986558	-2.35	-2.38	-2.32	-2.38	-2.00	-1.26	-1.85	-1.89	-2.04	-1.81	-2.29	-2.07	-1.20	-1.72	-1.07

Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
224996	-1.43	-1.77	-3.10	-3.15	-3.58	-3.35	-3.17	-3.04	-3.25	-2.58	-2.98	-2.41	-1.81	-2.32	-2.14
661259	-1.68	-1.32	0.93	1.32	1.07	0.68	0.00	0.49	-1.89	-1.58	-2.23	-1.07	0.49	-0.26	-0.68
3246379	-1.81	-1.49	-1.96	-1.54	-1.81	-1.49	-1.93	-1.68	-1.81	-1.38	-1.63	-1.26	0.26	0.14	-0.38
78783	0.00	0.00	-1.77	-1.77	-2.46	-0.49	-0.93	-0.14	-1.85	0.00	-1.81	0.14	-1.93	-2.26	-2.14
2639181	-5.27	-5.41	-5.12	-5.06	-5.04	-5.36	-5.79	-5.54	-4.95	-5.07	-4.82	-4.24	-5.57	-5.87	-5.19
1672467	-2.93	-3.09	-0.38	-2.10	-1.72	-2.41	-2.96	-2.94	-1.72	-2.61	-2.63	-2.51	-2.63	-2.83	-2.04
2950063	-3.94	-3.72	-3.87	-3.60	-2.29	-4.39	-4.30	-4.06	-3.41	-3.79	-3.57	-3.57	-4.15	-4.45	-3.38
3288518	-5.54	-5.37	-5.36	-5.26	-5.09	-5.02	-5.06	-4.98	-5.36	-4.78	-4.97	-4.64	-5.71	-5.88	-5.46
184110	-4.13	-3.94	-4.13	-3.61	-4.76	-5.22	-5.50	-4.84	-4.69	-3.75	-4.60	-4.15	-5.61	-5.95	-3.92
1368173	-2.26	-1.77	-3.02	-2.56	-2.43	-0.49	-0.93	-0.85	-2.41	-1.93	-2.23	-2.07	0.00	-0.38	-0.58
1813409	-1.85	-1.43	-1.14	-0.14	-1.72	1.20	0.26	0.68	-0.26	-1.72	-2.17	-1.14	-1.20	-1.49	-1.07
58309	-3.56	-3.38	-3.56	-3.15	-2.46	-2.94	-2.68	-3.51	-3.42	-3.19	-3.83	-3.34	-3.81	-3.68	-3.02
1721744	-0.85	-0.49	-0.58	-0.38	-0.93	-0.93	-1.26	-0.58	0.38	-1.54	-1.58	-0.77	0.26	0.14	0.00
1924344	-1.81	-2.29	-2.10	-2.14	-2.14	-2.61	-3.00	-2.66	-2.38	-1.63	-1.93	-0.85	-2.74	-2.66	-1.68
3176845	-2.66	-2.61	-4.17	-3.88	-3.77	-3.04	-3.39	-2.61	-3.81	-2.87	-3.25	-2.72	-3.58	-3.78	-2.72
2286809	-3.12	-3.07	-0.14	0.26	0.85	1.49	0.58	1.54	-1.85	-2.49	-2.77	-2.38	-0.14	-1.00	0.26
1985244	-1.20	-1.07	0.00	0.85	0.68	-0.14	-0.68	-0.26	1.54	-1.77	-2.35	-1.38	-0.85	-1.38	-1.14
1570042	-1.58	-1.20	-1.07	-1.26	-1.00	-1.38	-1.54	-1.26	-1.00	-0.85	-0.77	-0.38	1.77	1.07	0.49
2079906	-0.68	-0.68	-1.38	-1.00	-1.07	-1.07	-1.38	-0.77	-2.00	-1.20	-1.26	-0.38	-1.20	-1.26	-1.00
2852042	-0.49	-0.77	-2.58	-2.72	-2.49	-1.00	-1.89	-1.54	-1.85	-1.43	-2.07	-0.49	-0.14	-0.14	0.58
1319020	-0.58	-0.58	-2.41	-2.04	-2.54	-0.26	-1.32	-0.14	-1.93	-1.63	-1.58	-1.20	-1.00	-1.00	-1.20
1572555	-1.43	-2.07	-3.42	-3.23	-3.78	-1.68	-2.56	-1.20	-2.04	-2.20	-2.79	-1.58	-2.74	-3.09	-2.58
782235	0.38	-0.93	-2.14	-2.89	-2.51	-1.93	-2.94	-0.14	-2.38	-1.68	-2.10	-1.26	-3.51	-2.89	-2.46
1314882	-0.77	0.38	-2.43	-2.43	-2.77	-1.93	-2.49	-0.77	-2.20	-1.54	-2.38	-0.93	-3.00	-3.09	-2.20
1403636	-0.38	-0.38	-2.54	-2.54	-2.17	-1.77	-2.07	-1.68	-2.23	-1.07	-1.38	-0.38	0.14	-0.38	-0.14
1968921	-0.38	-0.38	-1.07	-1.07	-0.85	-0.38	-0.58	0.14	-0.93	0.00	-0.26	0.14	-0.49	-0.77	-0.93
1558081	0.26	0.00	-2.14	-1.77	-2.04	0.00	-1.43	-0.14	-1.43	-1.20	-1.26	-0.93	-2.00	-2.00	-1.81
2495131	0.14	0.58	-1.63	-1.49	-2.23	-1.58	-1.85	-1.14	-2.54	-1.14	-1.38	-0.58	-0.26	-1.14	-1.00
4049957	-1.14	-1.54	-3.56	-3.90	-4.34	-1.72	-3.05	-1.32	-3.63	-2.72	-2.70	-1.26	-3.10	-3.15	-3.04
1686585	-2.26	-2.10	-2.87	-2.41	-3.20	1.00	0.49	0.93	-2.07	-2.00	-2.96	-1.07	-1.81	-1.96	-1.14

Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
2696735	-2.74	-2.56	-3.25	-3.09	-3.05	-2.56	-2.96	-2.58	-2.58	-2.81	-2.94	-2.04	-2.87	-3.35	-2.58
1720149	-0.85	-0.85	-1.72	-1.63	-1.89	-1.14	-1.63	-0.68	-2.51	-1.32	-2.35	-0.38	-1.58	-1.96	-1.63
1866751	-1.32	-2.10	-3.15	-2.81	-3.00	-1.85	-2.79	-2.32	-2.74	-2.00	-2.54	-1.32	-3.09	-3.05	-2.58
1851696	1.43	1.54	-1.20	-1.43	-1.85	-1.26	-1.68	-0.93	-2.07	-2.43	-2.38	-1.96	-1.77	-1.89	-1.20
93820	-3.28	-3.17	-2.54	-2.61	-2.43	0.68	-0.58	-0.49	-2.51	-2.87	-2.54	-2.26	2.07	0.38	2.98
2368282	-0.93	-0.93	-0.77	-0.93	-0.49	-1.07	-1.00	-1.14	-0.58	-0.38	-0.49	-0.68	-1.14	-1.14	-0.77
2831248	0.77	0.58	-0.85	-0.77	-1.00	0.38	0.38	0.26	0.26	0.26	0.00	0.38	-0.49	-0.58	-0.77
182802	-1.49	-1.20	-0.85	-1.07	-1.14	-1.14	-1.14	-0.77	-0.85	-1.38	-1.38	-1.49	-1.32	-1.49	-0.68
1003884	0.77	0.14	-1.77	-1.38	-2.00	1.00	0.38	0.93	-1.00	-0.38	-1.14	-0.26	-2.07	-2.00	-1.81
1120	0.00	0.14	-0.26	-0.14	-0.26	0.26	0.38	0.49	1.43	0.38	0.38	0.68	-0.77	-0.93	-0.68
1308542	-0.85	-0.68	-0.14	0.58	0.26	-0.77	-0.77	-1.14	0.68	-0.58	-0.38	-0.93	-0.77	-0.93	-0.58
3820761	-0.14	0.38	-2.23	-1.38	-2.98	-0.58	-0.58	0.00	-1.89	-3.39	-3.45	-3.12	-2.58	-2.91	-2.56
1999167	-0.26	0.00	0.58	1.26	0.38	0.93	0.26	1.38	-1.68	-0.38	-1.38	-0.58	-2.20	-2.23	-2.23
1522716	0.00	0.38	-2.74	-2.94	-3.28	-1.14	-1.38	-0.26	-1.81	0.14	-1.07	1.14	-1.81	-1.68	-1.32
1612969	-1.14	-1.20	-0.93	-0.77	-1.07	-0.93	-1.32	-0.58	1.20	-0.85	-1.14	-0.58	-0.49	-0.77	-0.77
337500	0.00	0.14	-0.49	0.00	0.14	0.38	0.26	0.68	1.72	0.77	-0.14	0.93	-0.49	-0.85	-0.68
1285380	0.00	0.14	-0.77	-0.77	-0.38	-0.49	-0.49	-0.38	-0.49	-0.14	0.00	0.38	-0.38	-0.49	-0.26
1636639	-0.14	-0.14	-0.85	-1.26	-1.00	-1.43	-1.38	-1.07	1.14	-0.77	-1.14	-0.58	-0.68	-0.77	-1.00
1985870	0.38	0.68	-0.68	-1.07	-0.58	-0.85	-1.26	-0.68	-0.85	1.14	0.49	1.54	-0.85	-0.68	-0.14
1677936	-5.60	-6.02	-5.46	-5.53	-5.44	-6.07	-6.43	-6.18	-5.26	-5.56	-5.26	-4.40	-6.37	-6.64	-5.63
910612	-5.26	-5.38	-5.80	-5.43	-5.10	-5.36	-5.55	-5.99	-5.03	-4.76	-5.30	-4.75	-5.48	-6.28	-5.02
2594407	-2.77	-3.89	-5.50	-4.83	-5.13	-5.07	-5.31	-5.01	-5.10	-4.97	-5.41	-4.45	-5.50	-5.77	-5.31
963536	-3.41	-3.49	-2.96	-3.43	-2.89	-3.72	-3.49	-3.51	-3.22	-3.04	-3.29	-3.09	-3.43	-3.68	-3.04
2252895	-2.07	-2.35	-1.58	-2.17	-1.85	-1.26	-1.54	-1.77	-1.63	-1.85	-1.63	-1.32	-2.00	-2.26	-1.20
2804190	-0.58	-0.14	-0.93	-1.14	-0.68	-0.93	-0.85	-0.68	-0.68	-0.38	-0.14	-0.26	-0.49	-1.00	-0.14
1998428	-0.49	-0.26	-2.51	-2.79	-2.00	-2.77	-2.58	-2.51	-1.81	-2.66	-2.51	-2.43	-3.50	-3.51	-2.93
1800114	0.38	-0.26	-1.58	-1.63	-1.72	0.26	-0.93	0.85	-2.04	-1.38	-1.14	-1.54	-2.14	-1.93	-1.93
1806769	1.14	1.54	-1.85	-1.72	-2.00	-1.93	-1.81	-1.96	-0.77	-2.56	-1.96	-2.29	-2.43	-2.98	-1.77
2474163	-1.43	-1.00	-1.14	0.49	-0.26	0.85	0.68	1.20	-1.07	-2.10	-2.04	-1.68	0.00	-0.49	0.26
1435374	0.93	0.14	1.32	1.20	-0.38	0.77	-0.58	0.85	0.93	-1.89	-2.35	-1.96	-3.50	-3.74	-2.56

Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
434377	0.93	1.14	-1.00	-1.26	-1.20	-1.26	-1.26	-1.43	-1.72	0.00	0.14	1.81	-1.96	-2.07	-1.63
2121863	0.38	0.49	-1.77	-2.20	-1.72	-0.38	-0.85	-0.58	-2.14	-0.38	-1.07	-0.38	-2.26	-2.29	-1.63
1597231	-1.58	-1.26	0.93	2.04	1.32	-0.93	-1.43	-1.20	x	-1.77	-1.38	-1.00	-0.14	-0.26	0.14
4174437	-4.55	-3.55	-4.21	-4.49	-4.32	-4.77	-5.10	-4.79	-4.60	-3.84	-4.32	-2.54	-4.55	-4.84	-4.47
2182901	-4.47	-3.99	-4.10	-4.31	-3.96	-4.41	-4.90	-4.57	-4.35	-3.94	-4.48	-3.15	-4.46	-4.65	-4.08
1747979	-0.14	-0.14	-0.58	-0.68	-0.58	-0.49	-0.93	-0.26	-0.26	1.49	1.20	1.43	0.26	0.00	0.00
1630553	-0.58	0.14	-1.38	-1.68	-1.63	-1.20	-1.68	-0.68	-1.26	-1.85	-1.89	-1.20	-1.38	-1.49	-1.00
478960	-0.38	0.14	-1.00	-0.77	-0.68	0.49	0.14	0.85	0.85	-1.07	-0.77	-0.68	-1.26	-1.49	-0.77
2132487	-0.58	-0.68	-0.14	-0.26	-0.26	-0.93	-1.20	-1.07	0.58	-0.68	-0.38	-0.58	-0.77	-0.77	-0.26
2921152	-3.46	-3.00	-3.34	-3.32	-2.94	-3.79	-3.19	-3.61	-3.34	-3.64	-3.50	-3.52	-3.02	-3.55	-2.43
1846428	-1.96	-1.32	-1.38	-1.07	-1.14	-1.54	-1.89	-1.49	-1.43	-2.43	-2.14	-1.58	-2.10	-2.35	-2.04
2796143	0.85	0.85	-1.77	-1.85	-1.72	1.14	1.00	1.26	0.68	-0.49	-0.85	-0.14	0.14	-0.38	-0.26
1805613	-0.93	-0.85	-0.77	-0.93	-0.85	-1.14	-1.43	-1.43	-0.93	-1.07	-0.85	-0.38	-0.77	-1.38	-0.68
1431273	-2.43	-2.32	-2.79	-2.32	-2.00	-2.38	-2.35	-3.09	-1.72	-2.07	-2.14	-2.00	-2.35	-2.63	-1.68
1804662	-1.26	-1.14	0.49	1.32	0.38	0.26	-0.26	0.38	-0.77	-0.85	-1.14	-1.14	-1.07	-1.20	-0.77
2921194	0.14	0.68	-2.35	-2.41	-2.26	-0.58	-0.85	-0.58	-1.85	-1.20	-1.49	-0.68	-1.81	-2.14	-1.68
395368	-1.54	-2.04	-2.41	-2.56	-2.20	0.00	-0.49	-0.26	-2.26	-1.96	-1.85	-0.93	-2.96	-3.09	-2.10
2182861	-0.77	-0.58	-0.68	-0.26	0.00	-0.58	-0.49	-0.26	-0.26	-0.49	-0.58	-0.14	-0.58	-0.85	-0.49
1806436	-1.43	-1.58	0.26	0.38	0.26	0.14	0.00	0.77	x	-0.93	-0.58	-0.68	-0.85	-0.49	-0.26
2922143	-2.89	-2.91	-2.46	-2.58	-2.51	-3.32	-2.79	-3.12	-2.89	-2.58	-2.91	-2.91	-2.94	-2.72	-1.26
1696001	-1.43	-1.32	-0.58	-0.85	0.14	0.00	-0.49	0.14	-0.38	-1.07	-0.77	-0.93	-1.00	-1.26	-0.85
1635004	-3.10	-2.83	-1.20	-1.63	-2.14	-3.17	-3.46	-3.17	-1.68	-2.77	-0.26	-2.63	-3.14	-3.19	-2.41
2132752	-1.38	-2.32	-2.26	-2.58	-2.32	-1.58	-1.89	-2.00	-1.89	-1.89	-2.35	-1.38	-3.02	-3.09	-1.38
1734393	-3.26	-3.28	-2.81	-3.23	-2.56	-3.71	-3.05	-3.35	-2.07	-3.68	-2.41	-2.91	-3.29	-2.20	-3.09
4179338	-4.94	-4.93	2.20	3.09	2.49	-5.26	-4.60	-4.98	-4.79	-4.93	-5.09	-4.34	-4.63	-5.15	-4.27
1427623	-2.68	-2.49	1.20	2.04	1.26	-1.32	-1.63	-1.20	x	-2.49	-1.63	-2.38	-2.35	-2.56	-1.58
3320987	-2.26	-2.77	-1.63	-1.14	-1.49	1.32	0.38	1.89	-2.89	-1.93	-2.07	-0.49	-3.35	-3.87	-2.56
2239819	-2.20	-2.51	-2.00	-2.04	-1.81	1.72	2.00	1.14	1.07	-2.56	-1.72	-1.96	-2.43	-2.63	-1.77
876720	3.00	3.09	-0.49	-1.07	-0.49	-0.93	-1.00	-0.85	-0.85	-0.49	-0.26	-0.49	-1.00	-1.07	-0.68
1910091	2.20	1.72	-0.58	-1.00	-0.85	-0.58	-0.85	-0.58	-0.49	-0.77	-0.77	-0.38	0.68	0.77	0.38



Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
2174130	1.81	1.85	-0.38	-0.38	-0.85	-0.26	-0.26	-0.26	-0.49	0.49	0.77	0.49	-0.93	-0.68	-0.14
2219077	2.83	1.81	0.00	-0.26	-0.38	-0.26	-0.68	-0.26	-0.49	0.00	-0.14	-0.49	-0.49	-0.85	-0.68
1965041	2.32	2.20	-0.58	-0.49	-0.93	1.38	0.93	0.77	-0.49	0.68	0.26	1.49	-0.58	-0.77	-0.49
1649959	2.49	2.26	-0.77	-0.77	-1.07	0.00	0.00	0.49	-0.93	-2.04	-2.04	-1.38	-1.72	-2.29	-1.54
1222317	2.10	2.10	-1.58	-1.77	-1.14	-0.26	-0.38	-0.26	-1.00	0.38	0.58	0.58	-1.38	-1.96	-0.26
2510171	3.14	2.72	-0.26	0.38	-0.77	-1.14	-1.32	1.00	-0.85	-1.77	-1.32	-1.68	-1.26	-1.63	-1.26
1988674	2.96	1.96	-0.77	-1.32	-1.00	-1.32	-0.93	-1.43	-1.07	-0.14	0.38	-0.68	-1.26	-0.68	-0.49
1672640	1.49	1.54	-1.54	-1.77	-1.77	-1.38	-1.81	-0.85	-1.26	0.58	0.14	0.68	-1.38	-1.07	-0.68
1749417	2.17	1.58	-1.07	-0.26	-0.77	1.77	1.14	2.32	-1.38	-0.77	-1.07	-0.77	-1.00	-1.00	-1.63
1926543	-0.68	-0.26	1.96	2.23	2.14	1.07	1.26	0.49	-0.26	0.00	-0.58	-0.38	-0.26	-0.68	0.00
1504934	-2.85	-2.38	3.09	3.82	3.07	-1.38	-0.93	-1.58	-1.96	-2.14	-2.07	-2.32	-2.32	-2.98	-1.96
2512879	0.38	0.38	2.81	3.02	3.17	-0.93	-1.85	-1.32	-2.29	-1.20	-1.68	-0.68	-3.02	-3.55	-2.72
1359832	0.38	0.38	2.49	3.31	2.96	-1.26	-2.23	-0.93	-2.94	-2.41	-2.51	-1.38	-5.09	-5.09	-4.04
1583076	0.38	0.26	2.68	3.20	3.07	-1.07	-1.89	-1.07	-2.20	-1.72	-1.96	-0.77	-3.32	-3.42	-2.68
139838	-2.87	-2.72	3.34	3.71	3.89	-2.89	-2.63	-2.79	-2.54	-2.85	-2.17	-2.54	-2.79	-3.15	-2.35
1344654	-1.20	-0.77	3.38	3.17	3.12	1.20	1.07	0.49	-1.00	-1.20	-0.93	-1.07	-1.32	-2.07	-1.14
2513979	-3.35	-2.85	3.52	3.91	3.95	-3.45	-2.68	-3.36	-3.25	-3.66	-2.79	-3.28	-3.04	-3.70	-3.34
2369312	-1.58	-0.58	4.09	3.64	4.10	-3.94	-4.03	-3.36	-3.61	-0.58	-1.96	0.14	-3.12	-3.04	-1.54
2048364	-3.71	-1.89	3.46	3.99	3.68	-3.38	-3.73	-2.96	-3.34	-3.79	-3.34	-3.63	-2.46	-2.58	-1.58
85246	-4.22	-4.47	3.20	4.17	3.19	-3.72	-3.82	-4.29	-4.04	-4.87	-3.97	-4.49	-4.43	-5.34	-4.43
166337	-1.32	-2.07	3.26	3.93	3.38	-2.07	-2.10	-2.29	-1.20	-1.43	-1.20	-1.00	-2.38	-2.29	-1.68
138274	-1.00	-0.58	2.63	3.09	2.23	-1.20	-1.14	-1.07	-0.68	-0.93	-0.68	-0.26	-0.85	-0.77	-0.58
1633340	-2.07	-1.89	2.83	3.38	2.94	-1.89	-1.54	-1.96	-1.43	-1.63	-1.32	-1.58	-1.43	-2.00	-1.32
1982416	-0.93	-1.20	3.29	3.39	2.51	-1.32	-0.77	-1.32	-0.68	-0.14	-0.38	0.00	-0.85	-0.93	-0.26
946822	-0.68	-0.49	1.14	1.63	1.26	-0.49	-0.49	-0.14	-0.49	-0.85	-0.49	-0.58	-0.58	-0.58	-0.68
2517330	-0.26	-0.38	2.14	1.89	1.32	-0.38	-0.38	-0.49	0.14	-0.26	-0.14	-0.14	0.00	0.14	0.00
2516489	-0.85	-1.00	2.79	3.00	2.72	0.14	0.38	0.68	-0.68	-1.07	-0.77	-1.20	-0.93	-0.93	-1.00
88741	-1.93	-1.49	3.92	3.69	2.56	-2.07	-1.93	-1.93	-1.32	-2.26	-1.00	-2.04	-1.58	-2.10	-1.43
168865	-2.26	-2.23	3.07	3.57	3.49	-2.23	-2.17	-2.63	-1.96	-1.68	-1.81	-2.10	-2.35	-2.58	-1.38
231779	-0.77	-0.93	2.00	2.23	1.81	-0.68	-0.49	-0.77	-1.00	-0.38	-0.14	-0.26	-1.07	-0.85	-0.68

Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
234123	-1.20	-0.93	1.81	1.32	1.38	1.26	1.32	0.85	0.00	-1.00	-0.85	-1.43	-0.85	-1.00	-0.49
1833801	-0.14	-0.58	2.17	2.70	2.68	1.32	1.14	1.14	x	-0.77	-0.68	-0.26	-0.26	-0.49	-0.26
1923613	0.00	-0.26	2.83	2.51	3.32	1.14	1.81	0.58	-0.93	-0.93	-0.77	-0.93	-0.49	-0.77	-0.38
2058620	-0.77	-0.77	1.32	1.85	1.81	1.07	1.32	1.07	-0.85	-0.85	-1.14	-0.38	-1.00	-1.20	-1.00
1930954	-0.49	-0.38	3.07	2.66	1.81	0.93	1.07	0.49	x	-0.49	-0.77	-0.85	-1.26	-1.32	-0.58
1511658	-4.58	-5.14	3.62	4.31	2.70	-5.11	-5.15	-2.04	-4.02	-4.79	-4.59	-4.25	-5.39	-5.07	-4.34
2590673	-1.32	-0.85	3.39	3.25	3.31	-0.49	-1.14	0.00	-0.85	-1.85	-1.26	-1.72	-1.49	-1.93	-1.20
1995380	0.49	0.93	1.58	2.41	2.00	0.85	-0.14	1.14	-0.68	-2.04	-2.23	-2.17	-0.68	-1.38	-0.85
167409	-4.55	-4.54	2.89	4.34	3.19	-3.89	-4.58	-3.98	-1.72	-4.36	-3.47	-3.55	-4.60	-4.62	-3.95
1846226	-0.68	-0.26	1.32	1.49	1.85	0.68	0.93	0.85	-1.07	-0.85	-1.26	-0.58	0.68	0.26	0.38
2052185	-3.20	-3.19	3.42	4.54	2.89	-3.89	-4.04	-3.61	-3.00	-3.81	-3.26	-3.09	-3.80	-3.91	-3.36
2517389	-2.14	-1.81	3.66	3.20	3.32	-1.07	-0.85	-1.43	-1.38	-1.43	-1.89	-1.32	-1.63	-2.20	-1.32
911015	-1.20	-1.14	3.23	3.14	2.49	1.43	1.00	1.20	-0.68	-1.20	-0.49	-0.93	-1.58	-1.26	-1.07
604856	0.00	-1.14	3.22	3.36	0.00	-1.54	-1.93	-0.58	-1.20	-0.93	-1.49	-0.58	-1.63	-2.32	-1.93
1448718	-2.66	-2.56	4.84	3.64	-1.43	-2.79	-2.20	-2.35	-1.68	-2.51	-1.68	-1.93	-2.68	-2.17	-2.23
2517268	-2.41	-2.07	3.12	4.10	3.04	-2.41	-2.10	-2.43	-1.77	-1.77	-1.81	-1.54	-2.26	-2.20	-1.38
167134	-2.00	-2.38	3.28	3.63	3.63	-2.17	-2.35	-2.20	-1.63	-1.26	-1.77	-1.96	-2.32	-1.93	-0.85
2843638	0.68	0.49	3.10	2.63	2.23	-0.58	-0.38	-0.49	-0.26	-0.14	0.00	-0.58	-0.26	-0.14	-0.26
1813269	-0.49	0.26	3.60	3.77	3.31	-2.74	-3.49	-3.46	-2.61	-1.07	-2.20	0.14	-3.34	-4.07	-2.66
1861971	-4.26	-3.64	3.26	4.32	3.09	-5.41	-5.44	-4.95	-4.96	-4.89	-4.64	-4.91	-5.12	-5.58	-4.47
2005973	-0.68	-1.20	2.43	3.61	2.54	-0.26	-0.68	-1.00	-1.00	-1.07	-1.20	-1.43	-1.43	-1.81	-0.77
2515729	-2.89	-2.83	3.46	3.87	3.88	-1.14	-2.17	-0.58	-1.81	-2.85	-2.98	-2.94	-1.68	-2.63	-2.17
2132356	-1.07	-0.85	2.98	3.32	2.74	0.77	0.00	0.58	x	-1.07	-0.85	-0.85	-0.85	-1.38	-0.68
1001726	-0.14	-0.58	2.54	2.77	2.83	1.38	0.93	1.00	x	-1.38	-1.07	-0.77	-0.14	-0.38	-0.38
2631845	-1.07	-1.49	2.70	4.40	-0.49	-2.07	-2.23	-1.93	-2.51	-2.46	-2.29	-2.51	-3.00	-3.32	-2.51
86390	-1.20	-1.43	3.04	4.00	2.51	-1.54	-1.89	-1.63	-1.14	-0.85	-1.07	-0.49	-1.93	-2.04	-1.00
1287840	-0.68	-0.77	1.54	1.07	1.93	0.38	0.49	0.58	-0.58	-1.00	-0.93	-0.58	-0.68	-0.68	-0.77
2516905	-0.77	-0.93	2.46	3.55	2.63	-1.07	-0.85	-1.07	-0.26	-0.49	-0.49	-0.49	-0.38	-0.58	-0.14
606122	-1.49	-1.32	3.23	3.02	1.49	-1.49	-1.00	-1.72	-1.00	-1.38	-0.77	-1.49	-1.00	-1.38	-1.43
3553733	-0.93	-0.77	2.23	3.87	1.38	-0.68	-1.14	0.00	-1.00	-0.85	-1.38	-0.85	-0.93	-1.07	-0.58

Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
1813381	-2.72	-2.58	3.52	4.06	3.70	-2.41	-2.54	-2.58	-1.81	-2.61	-2.20	-2.00	-2.85	-3.20	-2.32
1988108	-0.26	-0.26	2.17	2.29	2.10	0.49	0.14	0.26	1.07	-0.49	-0.85	-0.26	-1.85	-1.81	-1.00
1644648	-2.35	-1.32	1.38	2.07	2.35	1.32	0.93	1.07	-0.14	-1.96	-2.41	-1.77	-2.10	-2.38	-1.68
2516104	-3.79	-3.77	2.89	3.12	3.31	-3.91	-3.63	-3.45	-3.15	-3.45	-3.60	-3.28	-3.77	-3.91	-3.31
2516448	-1.93	-1.77	3.39	2.51	3.23	-1.93	-1.77	-1.68	-1.14	-1.32	-1.77	-1.14	-1.43	-1.81	-1.68
2514507	-3.67	-3.46	3.52	3.47	3.78	-3.23	-2.96	-4.01	-2.81	-3.20	-3.07	-2.94	-3.15	-3.86	-3.26
1427470	-0.93	-0.85	2.00	2.61	1.96	-1.34	-1.49	-1.72	0.38	-0.85	-0.77	-0.85	-1.20	-1.43	-0.68
1311471	-2.26	-2.61	3.90	3.84	4.10	-2.26	-2.10	-2.23	-1.38	-1.89	-2.20	-1.72	-2.43	-2.38	-1.77
195142	-2.58	-2.79	3.26	3.88	3.47	-2.41	-2.54	-2.46	-2.14	-2.98	-2.54	-2.26	-2.91	-2.58	-2.43
29598	-3.60	-3.34	2.81	3.82	2.94	-2.54	-2.54	-3.12	-3.14	-3.73	-3.19	-2.79	-4.31	-4.56	-3.72
1968576	0.26	0.14	1.96	2.63	1.54	0.93	1.32	0.58	-1.07	-1.20	-1.26	-0.77	-2.00	-2.17	-1.32
2959255	-1.26	-0.85	1.26	1.85	1.72	-0.58	-0.26	-0.26	-1.85	0.38	-0.14	1.07	-1.07	-1.38	-0.85
446969	-1.00	-0.26	3.07	3.74	2.70	-0.58	-1.89	0.49	-2.17	-1.96	-2.70	-1.43	-2.85	-3.32	-1.89
1631511	-1.49	-1.00	1.49	2.32	2.07	1.07	1.49	0.58	-1.85	-1.93	-1.72	-1.68	-2.61	-2.93	-2.29
1508741	-0.38	0.14	3.12	4.13	3.19	-3.00	-2.94	-2.66	-1.54	-2.91	-2.04	-2.66	-2.66	-3.10	-2.10
2513602	-2.51	-2.56	2.04	3.17	3.23	2.35	1.77	1.77	-1.81	-1.96	-1.89	-1.77	-2.10	-2.70	-1.38
1981145	-1.49	-1.63	1.85	2.77	2.58	1.63	2.20	1.26	-1.63	-2.10	-2.04	-2.20	-1.54	-2.00	-1.93
2103752	0.58	0.93	1.72	2.26	1.32	1.58	1.43	1.32	0.26	-1.00	-1.49	-1.07	-1.63	-2.07	-1.68
2658782	-2.72	-2.04	1.77	3.66	1.68	1.72	0.68	1.81	x	-2.85	-2.20	-2.87	-1.93	-2.46	-1.93
2099420	-1.43	-1.38	2.51	1.72	2.72	2.49	1.63	2.07	-0.93	-1.72	-1.38	-1.77	-1.14	-1.54	-0.85
637639	-2.54	-2.68	2.38	3.39	2.63	1.58	1.43	1.07	-2.17	-1.85	-0.77	-2.35	-2.38	-2.26	-1.58
279249	-3.78	-3.73	2.49	3.14	2.79	1.85	2.04	1.58	-3.15	-2.81	-2.32	-3.41	-3.15	-3.69	-2.63
1379063	-1.54	-1.26	2.96	3.02	2.10	1.93	1.54	1.58	-0.93	-1.63	-1.38	-1.14	-2.07	-2.17	-1.20
89747	-3.28	-3.43	2.83	3.69	2.98	1.63	1.38	1.32	-1.89	-3.19	-2.81	-2.56	-3.19	-2.66	-2.41
2515873	-1.96	-1.68	2.51	3.29	2.79	1.32	0.77	1.54	-2.07	-2.32	-2.41	-1.43	-1.00	-1.49	-1.20
1432372	0.38	1.07	1.26	2.14	1.89	1.68	1.20	1.68	-1.00	-1.14	-0.68	-0.85	-1.63	-1.54	-1.20
1633719	-3.46	-3.52	2.38	2.49	3.00	1.77	1.85	1.49	-1.89	-3.70	-2.98	-2.63	-3.77	-3.47	-2.96
1712663	-1.20	-0.68	3.34	3.49	2.41	-1.49	-1.38	-1.07	1.32	-1.43	-1.07	-1.38	-1.72	-1.49	-0.85
4285203	-1.26	-1.20	2.81	3.72	2.00	-1.43	-1.49	-1.20	1.49	-1.38	-1.58	-0.85	-1.32	-1.81	-1.00
1634342	-0.49	0.26	0.68	0.93	0.93	1.58	1.58	1.93	-0.38	-0.85	-1.07	-0.68	-0.58	-1.14	-0.85

Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
1418871	-1.00	-1.14	-0.93	-0.85	-0.49	2.81	2.77	2.61	-0.85	-1.32	-1.14	-1.20	-1.07	-1.38	-0.85
3766382	-0.85	-1.00	-0.77	-1.20	-1.20	1.89	1.43	1.49	-0.77	-0.49	0.00	-1.07	-1.49	-1.14	-0.68
943181	-1.72	-1.63	-1.26	-1.68	-1.32	2.85	3.07	1.89	-1.00	-1.38	-0.77	-1.43	-1.38	-1.32	-1.00
603761	-2.00	-1.54	-1.81	-1.93	-1.20	3.12	1.32	3.63	x	-1.85	-1.32	-1.26	-1.14	-1.14	0.00
1297562	0.68	0.77	-2.26	-2.56	-2.26	1.63	2.07	1.32	0.49	-0.58	-1.81	-1.81	-1.00	-0.68	-0.49
2910715	0.58	0.26	-1.00	-0.93	-0.77	2.54	1.32	2.81	0.49	-0.68	-0.77	-0.49	-1.43	-1.77	-1.14
196975	-0.68	-0.85	0.49	0.85	0.49	1.89	1.32	1.85	x	-0.38	-0.49	0.00	-0.26	-0.26	-0.38
1453049	1.32	1.58	-0.77	-0.93	-1.07	2.17	1.93	2.26	x	-1.43	-1.07	-0.93	-1.77	-1.77	-1.00
1968695	-0.26	-0.49	-1.32	-1.00	-0.85	1.63	1.07	1.89	-1.20	-0.38	-0.14	0.00	-1.14	-1.07	-1.00
958344	-4.09	-3.74	-3.89	-3.54	-3.39	3.02	3.12	2.94	-2.10	-3.60	-3.64	-3.81	-4.03	-4.22	-2.93
2820985	-2.91	-2.29	-0.68	0.14	-0.38	2.43	1.77	2.70	-1.58	-2.54	-1.68	-2.14	-1.96	-3.05	-1.58
1633393	-0.38	-0.49	-1.49	-1.14	-1.26	1.49	1.49	1.54	-0.14	-1.54	-1.54	-1.63	0.49	0.00	-0.26
1806451	-1.58	-1.14	-1.49	-1.00	-1.14	2.49	2.68	1.68	-1.00	-1.43	-1.07	-0.93	-1.38	-1.85	-0.77
2674772	-2.93	-2.96	-0.26	0.14	0.14	3.17	2.17	2.94	-1.63	-2.94	-2.38	-2.20	-3.26	-3.23	-2.23
1376121	1.20	1.58	-1.20	-1.07	-0.68	1.63	1.63	1.93	-0.85	-0.85	-0.68	-0.58	-1.20	-0.58	-0.85
831794	-1.72	-1.26	0.58	1.54	0.93	2.23	1.58	2.04	-2.17	-1.63	-1.54	-1.93	-0.58	-0.68	-0.49
1427681	-2.04	-2.20	1.77	2.17	2.70	2.72	2.43	2.54	-1.85	-2.17	-1.63	-1.58	-2.35	-2.43	-1.85
2912830	-3.32	-3.56	0.14	-0.14	-0.85	3.20	2.87	2.54	0.58	-2.98	-3.15	-2.89	-3.77	-3.79	-2.68
504786	-2.35	-1.85	-2.43	-2.98	-2.49	2.51	2.38	2.32	-2.23	-1.81	-2.04	-1.38	1.63	1.20	0.58
254081	-5.47	-5.31	-4.95	-5.03	-5.13	-4.78	-4.73	-5.17	4.21	-4.70	-5.38	-5.43	-5.35	-5.44	-4.66
1330674	-5.03	-5.22	-4.34	-4.84	-4.91	-4.36	-5.42	-5.00	4.39	-4.39	-4.52	-4.81	-5.07	-5.31	-3.91
2377834	-6.27	-6.31	-5.95	-5.86	-5.77	-6.48	-6.63	-6.55	4.69	-6.10	-6.11	-5.81	-6.64	-6.60	-5.98
2075464	-4.57	-4.94	-4.38	-4.83	-3.97	-5.08	-4.77	-4.82	4.28	-4.75	-4.23	-4.38	-5.01	-4.77	-4.55
2383235	-5.07	-5.35	-4.99	-4.95	-4.97	-5.48	-5.85	-5.69	4.59	-4.95	-5.43	-4.91	-5.73	-5.77	-5.00
1285503	-0.85	-0.85	-1.49	-1.81	-1.68	-2.14	-2.38	-1.49	2.43	-2.46	-1.38	-1.54	-2.07	-2.29	-1.85
2383205	-5.14	-5.34	-4.54	-4.85	-4.73	-5.55	-5.63	-5.53	4.66	-5.37	-5.28	-4.89	-5.67	-5.63	-5.01
2015871	-5.38	-5.30	-5.41	-5.03	-4.74	-5.25	-5.17	-5.35	2.66	-4.97	-4.95	-4.73	-4.88	-5.64	-4.84
2374046	-0.68	-0.77	-0.49	-1.20	-0.49	-0.58	-0.58	-0.58	3.55	-1.07	-0.49	-1.20	-0.38	-0.68	-0.49
1709828	1.14	0.38	-0.49	-0.49	-0.38	1.20	0.93	0.93	2.26	-0.26	-0.93	-0.14	-0.26	-0.38	0.00
2061119	-0.38	-0.58	-0.77	-0.68	-0.85	0.14	0.14	0.14	1.93	0.00	-0.26	0.00	-0.14	-0.38	-1.20

Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
3665105	-2.94	-3.04	-2.83	-3.14	-3.04	-1.49	-1.72	-1.49	4.26	-2.94	-2.83	-2.89	-2.81	-3.46	-2.29
2068983	-3.04	-3.39	-3.23	-3.09	-3.05	-3.45	-3.41	-3.39	4.96	-3.46	-2.85	-2.68	-3.35	-3.35	-3.32
2242648	-3.57	-3.68	-3.39	-3.69	-3.50	-3.67	-4.55	-3.45	3.87	-3.73	-3.69	-3.69	-3.80	-3.89	-3.20
885032	-3.47	-3.17	-3.38	-3.14	-2.77	-3.45	-2.89	-3.28	3.85	-2.17	-2.35	-2.94	-2.61	-3.20	-2.04
2383830	-4.65	-5.12	-5.48	-5.45	-5.13	-5.76	-5.69	-5.91	4.54	-5.76	-5.39	-5.03	-6.48	-6.49	-5.74
2085191	-6.64	-6.64	-6.35	-6.41	-6.23	-6.64	-6.64	-6.64	4.35	-6.64	-6.64	-6.60	-6.64	-6.64	-6.42
2792982	-6.20	-6.20	-6.03	-5.79	-5.51	-6.15	-6.08	-6.16	4.48	-5.95	-5.86	-5.76	-5.53	-6.12	-5.82
179929	-1.20	-1.26	-0.77	0.26	-0.93	0.58	-0.26	0.58	2.20	-2.07	-2.07	-1.07	-2.35	-2.54	-2.04
2741788	-1.68	-1.43	-1.43	-1.20	-1.49	-1.38	-1.58	-1.00	2.83	-0.14	-0.14	0.00	-1.26	-1.07	-1.32
2373608	-4.11	-4.46	-3.46	-4.36	-3.60	-4.09	-3.79	-3.92	4.07	-4.22	-3.99	-3.49	-4.10	-3.91	-3.78
2182095	-4.31	-4.14	-4.32	-4.07	-3.79	-4.14	-4.08	-4.40	4.19	-3.51	-3.64	-3.68	-3.86	-4.50	-3.46
2923150	-6.52	-6.64	-6.21	-6.32	-6.20	-6.56	-6.64	-4.96	5.07	-6.46	-6.64	-6.19	-6.64	-6.64	-6.55
293495	-0.93	-1.49	2.56	3.78	1.38	-2.38	-2.91	-0.58	3.47	-1.63	-2.54	-2.72	-2.32	-2.98	0.14
4284270	-1.14	-1.26	2.68	3.79	1.81	-1.63	-1.20	-1.38	3.15	-1.72	-1.49	-1.20	-1.26	-1.58	-0.93
958923	-1.26	-1.32	-0.26	-1.07	-0.49	1.89	1.72	1.85	2.41	-1.32	-0.49	-0.85	0.77	0.68	-0.38
1921393	-3.00	-2.14	-2.91	-2.93	-2.29	2.20	1.20	2.54	3.19	-1.38	-2.49	-1.85	-2.87	-3.25	-2.41
1447866	-0.26	0.26	-0.26	-0.58	0.00	-0.38	-0.26	-0.26	-0.58	2.00	2.07	1.93	-1.07	-1.00	-0.26
1666737	1.14	0.93	-0.38	-0.77	-0.26	-0.14	-0.49	0.14	-0.49	2.54	2.17	2.61	-1.49	-1.58	-0.14
586245	-1.07	-0.26	-0.77	0.49	-0.58	-0.77	-0.49	-0.68	-1.89	2.72	1.07	2.70	-2.89	-3.02	-2.00
194162	-1.58	-1.54	-1.54	-1.54	-1.43	-1.54	-2.43	-1.43	-2.07	2.20	2.63	2.46	-2.43	-2.89	-1.93
243123	-1.72	-2.00	-1.32	-1.49	-1.58	-1.77	-2.14	-1.93	-0.49	-1.89	-1.77	-1.14	2.91	2.58	1.72
382416	-2.10	-2.23	-2.68	-2.49	-1.54	-3.34	-3.02	-2.58	-2.17	-2.04	-2.17	-2.35	1.68	0.58	3.52
1852659	-1.68	-1.32	-1.77	-2.38	-1.77	-2.43	-2.10	-2.20	-1.49	-2.17	-1.81	-1.81	3.09	2.91	1.38
3220181	-1.07	-0.85	-0.49	0.14	-0.49	-0.49	-0.77	0.14	-0.14	-0.85	-0.93	-0.26	1.72	1.26	1.49
1726307	-0.77	-0.26	-1.32	-1.49	-1.07	-1.38	-1.26	-1.07	-1.32	-0.93	-0.68	-0.68	2.17	1.93	1.54
1904244	-0.85	-0.38	0.00	0.00	0.26	-0.68	-0.14	-0.14	0.14	-0.85	-0.14	-0.26	2.23	2.04	1.43
2039955	-1.20	-1.54	-1.32	-0.68	-0.77	-1.38	-0.93	-1.20	-1.07	-1.20	-1.32	-0.58	2.58	2.63	1.96
2675641	-1.68	-1.43	-1.68	-1.54	-1.20	-0.85	-0.68	-0.77	-1.20	-0.14	-1.00	0.26	2.10	1.93	1.20
1412749	-1.00	-1.00	-0.85	-1.00	-0.49	-1.14	-0.77	-1.26	-0.26	-0.77	-0.38	-1.00	2.43	2.46	2.04
1963854	-0.85	-0.93	-1.20	-1.07	-0.77	0.14	0.26	0.77	-1.00	-0.14	-0.26	-0.38	2.00	1.63	1.00

Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
2949085	-0.26	-0.14	-1.07	-0.93	-1.20	-0.49	-0.77	-0.49	-0.68	-0.14	-0.38	0.00	2.17	1.68	1.07
2963196	-2.17	-2.00	-2.23	-2.29	-2.26	-2.38	-2.81	-2.10	-2.43	-2.00	-2.32	-1.77	2.35	1.26	2.56
1505977	-1.77	-1.72	-1.26	-1.26	-1.49	-2.17	-2.26	-2.14	-1.49	-2.43	-1.49	-1.89	3.19	2.38	1.58
1674985	-0.77	-0.49	-0.49	-1.00	-0.68	-0.26	-0.26	-0.38	-0.49	-0.58	-0.49	-0.49	1.85	1.89	1.20
2109054	-1.14	-0.58	-0.68	-0.58	-1.14	-0.14	-0.58	-0.26	-0.77	-1.32	-1.07	-0.77	2.35	1.81	1.38
3317039	-1.14	-1.00	-1.07	-1.00	-0.93	0.58	0.14	0.93	-0.68	-1.14	-1.26	-0.85	2.10	2.10	1.68
2838551	-0.93	-0.68	-0.77	-1.00	-0.58	-0.38	-0.38	-0.58	-0.14	-0.85	-0.58	-0.77	1.63	1.63	0.77
1477568	-1.26	-1.26	-2.20	-2.14	-2.32	-0.77	-1.43	-0.77	-1.93	-1.20	-1.77	-0.77	2.14	1.26	2.77
2963871	-0.26	-0.26	-1.32	-1.58	-1.38	-0.77	-0.93	-0.68	-0.77	-0.85	-0.68	-0.58	1.32	1.54	1.72
1740547	-0.77	-1.07	-1.26	-1.38	-1.26	-1.32	-1.20	-1.43	-1.14	-0.77	-0.38	-0.14	2.61	2.41	2.46
2292011	-2.00	-2.41	-1.81	-2.04	-2.04	-2.29	-2.72	-2.10	-2.38	-1.96	-2.51	-2.17	3.29	3.02	0.00
1349484	-0.26	-0.14	-0.26	-0.38	-0.49	-0.49	-0.77	-0.58	x	0.00	-0.14	0.00	1.93	1.85	1.32
1674253	1.00	0.68	-1.00	-1.07	-0.93	0.14	0.58	0.00	-0.85	-0.49	-0.68	-0.26	1.77	1.49	0.85
1932189	-2.38	-2.00	-2.70	-2.46	-2.43	-2.56	-2.38	-2.35	-2.04	-1.26	-2.29	-1.26	3.25	2.61	0.85
1403041	-1.81	-1.58	-1.68	-1.38	-1.14	-1.49	-1.43	-1.43	-1.14	-1.72	-1.20	-0.85	2.96	2.26	1.00
1486358	-1.72	-1.26	-2.70	-2.29	-2.23	-1.63	-1.89	-1.20	-2.56	-2.14	-2.54	-2.29	2.14	1.89	0.85
1439065	-0.14	-0.14	0.38	-0.58	0.14	-0.49	-0.49	-0.49	x	-0.14	0.38	0.00	1.85	1.54	1.77
530629	-0.85	-1.14	-0.58	-1.00	-0.58	-1.32	-1.00	-1.00	x	-0.93	-0.38	-0.38	2.83	2.43	1.68
1672676	-1.72	-1.63	-2.10	-2.26	-2.10	-2.00	-2.17	-1.58	-1.89	-1.54	-1.68	-1.32	2.89	2.58	1.68
1989129	-1.00	-1.07	-1.81	-1.68	-1.81	-0.14	-1.14	-0.14	-1.58	-1.20	-1.77	-0.58	2.29	1.89	2.91
1486348	-2.46	-2.38	-2.43	-2.38	-2.41	-2.54	-2.51	-2.81	-1.68	-1.72	-1.68	-1.63	2.38	2.68	1.63
1397294	-0.49	-0.49	-1.38	-1.14	-1.07	-1.32	-1.77	-1.20	-1.32	0.26	-0.93	0.58	2.70	2.26	1.68
2844322	-1.77	-1.26	-2.00	-2.04	-2.14	-2.23	-2.58	-2.17	-1.93	-2.17	-2.00	-1.20	2.85	2.46	2.07
1481440	-1.14	-1.32	-1.07	-1.38	-0.85	-1.49	-1.43	-1.26	-1.00	-1.26	-0.49	-0.68	2.38	2.43	1.63
26459	-1.00	-1.00	-0.85	-0.85	-1.14	-1.20	-1.20	-0.93	-1.14	-0.77	-0.93	-0.85	2.17	2.23	0.68
1406786	-0.68	-0.58	-0.93	-1.38	-1.38	-1.26	-1.00	-0.85	-1.49	-1.14	-0.49	-1.14	2.07	1.72	0.93
1485846	-5.50	-5.53	-5.15	-5.17	-4.72	-5.57	-5.68	-5.44	-5.02	-5.42	-5.00	-4.87	3.02	2.54	2.23
2153242	-1.54	-1.68	-1.58	-1.72	-1.54	-2.14	-1.72	-2.00	-1.43	-1.81	-1.14	-0.77	2.89	2.51	1.14
2157981	-1.93	-1.85	-1.93	-1.81	-1.49	-0.38	-0.49	-0.26	-1.07	-2.38	-1.49	-1.43	3.09	2.32	0.85
3244361	-1.20	-1.07	0.68	1.38	0.85	-0.85	-1.26	-1.20	-0.58	-1.32	-1.07	-0.77	2.14	1.93	1.07

Table 3

Clone ID	Lung (2881)	Lung (2152)	Liver (4209)	Liver (4133)	Liver (2147)	Kidney (6993)	Kidney (6994)	Kidney (6995)	Pancreas (6996)	Spleen (6997)	Spleen (6998)	Spleen (6998)	Brain (6999)	Brain (7000)	Striatum (3971)
1986737	-1.43	-1.26	-2.26	-1.63	-1.96	-1.07	-0.68	-0.93	-1.77	-0.85	-1.43	0.00	2.32	2.14	0.85
2506867	-2.93	-2.61	-2.85	-2.98	-3.23	-1.20	-1.07	-0.49	-2.49	-3.15	-3.05	-2.77	3.32	2.51	1.49
1211682	-1.81	-1.96	-1.07	-1.54	-1.26	-1.89	-2.35	-2.23	-2.46	-1.26	-1.85	-1.14	2.79	2.41	1.58
1416354	-0.93	-0.85	-1.38	-1.14	-1.26	-1.58	-1.32	-1.38	-1.26	-0.77	-0.49	-0.68	1.96	1.49	1.07
2963962	-1.26	-1.26	-1.07	-1.58	-1.00	-1.68	-1.77	-1.58	-1.07	-1.20	-1.14	-1.20	1.43	0.85	1.49
1761086	-1.93	-1.93	-1.58	-2.14	-1.72	-1.20	-1.38	-1.38	-1.81	-2.04	-1.81	-1.96	1.54	1.20	0.26
2588552	1.68	1.72	-0.77	-1.38	-1.00	-1.43	-1.26	-1.07	-0.58	-1.96	-0.93	-0.68	2.72	1.85	2.46
1901271	-0.85	-0.38	2.04	1.14	0.38	-0.14	0.38	0.00	-1.20	-0.38	0.14	0.14	1.63	1.49	1.07
1740924	-1.00	-0.93	1.43	1.14	1.38	-1.14	-0.85	-1.49	-0.58	-0.49	-0.68	-0.68	1.89	1.96	0.77
1480159	-1.54	-1.58	-1.26	-1.32	-1.26	-0.49	-0.26	-0.49	1.43	-1.49	-1.00	-0.38	2.17	2.00	0.77

Table 4

Clone ID	Var. Betw.	Var. Within	F	Probability
2380381	1.94	0.10	20.13	6.82E-08
1618422	2.04	0.07	27.49	5.37E-09
2672064	2.41	0.10	23.48	1.96E-08
608361	1.97	0.09	23.03	2.29E-08
1922596	4.97	0.19	25.77	9.14E-09
1850033	5.92	0.40	14.64	1.42E-06
986987	8.95	0.10	86.39	2.99E-13
718807	5.91	0.09	67.09	2.71E-12
2880435	1.47	0.06	24.37	1.45E-08
187326	10.19	0.13	79.62	6.10E-13
1997963	6.10	0.17	36.56	4.95E-10
467700	8.97	0.20	45.64	7.52E-11
57382	11.72	0.12	97.40	1.04E-13
1222442	4.12	0.17	23.82	1.74E-08
4013105	9.43	0.26	36.28	5.29E-10
924319	15.30	0.53	28.81	3.64E-09
1645119	3.78	0.11	34.35	8.37E-10
1379925	8.88	0.10	93.06	1.56E-13
1900961	6.90	0.17	40.30	2.17E-10
3506985	8.86	0.42	21.22	4.45E-08
551403	4.53	0.21	21.39	4.17E-08
3948420	7.12	0.19	36.73	4.76E-10
1722853	2.58	0.10	25.92	8.71E-09
1557490	4.82	0.15	33.20	1.11E-09
3208425	4.49	0.22	20.44	6.03E-08
1668474	5.40	0.08	67.90	2.44E-12
1622542	2.13	0.07	30.18	2.47E-09
4014318	3.14	0.15	20.97	4.89E-08
2394888	5.04	0.13	37.38	4.11E-10
1345550	14.73	0.19	76.01	9.14E-13
1719955	7.24	0.23	31.18	1.88E-09
2256026	2.96	0.11	26.92	6.38E-09
1538086	2.63	0.07	38.49	3.21E-10
958633	1.62	0.07	23.10	2.24E-08
2635943	10.60	0.16	66.67	2.86E-12
121888	11.84	0.13	88.75	2.36E-13
1627492	2.26	0.07	33.25	1.10E-09
4073867	2.26	0.11	21.01	4.82E-08
2190170	1.94	0.08	23.90	1.70E-08
972224	14.59	0.30	49.39	3.83E-11
1413644	4.89	0.24	20.10	6.90E-08
1538224	1.89	0.09	20.37	1.10E-07
2623268	2.63	0.12	21.59	3.87E-08
1665533	1.42	0.07	19.97	7.25E-08
981484	2.10	0.04	47.76	5.10E-11
973629	11.67	0.18	66.17	3.06E-12
1539638	1.56	0.04	35.82	5.89E-10
3015758	10.73	0.24	44.75	8.89E-11
2832314	4.17	0.14	30.35	2.36E-09
1702996	2.53	0.08	31.33	1.81E-09
839947	2.19	0.09	24.61	1.33E-08
1867522	17.51	0.28	61.87	5.47E-12
1987831	2.13	0.08	27.25	1.06E-08
2639708	9.66	0.07	137.49	4.99E-15
973815	11.77	0.23	51.52	2.66E-11
169884	11.47	0.12	96.95	2.14E-13
2638235	3.76	0.05	70.07	1.86E-12



Table 4

Clone ID	Var. Betw.	Var. Within	F	Probability
305198	8.01	0.19	42.81	1.30E-10
57997	6.98	0.15	45.44	7.81E-11
986558	7.92	0.13	61.57	5.71E-12
224996	9.69	0.26	37.77	3.76E-10
661259	3.88	0.18	21.82	3.55E-08
3246379	4.92	0.18	26.85	6.53E-09
78783	4.25	0.24	17.54	3.57E-07
2639181	27.23	0.12	219.82	7.75E-17
1672467	11.44	0.15	77.23	7.96E-13
2950063	13.85	0.21	65.86	3.18E-12
3288518	22.52	0.19	119.44	1.73E-14
184110	20.44	0.53	38.26	3.37E-10
1368173	5.43	0.09	61.20	6.02E-12
1813409	4.65	0.19	24.90	1.21E-08
58309	17.08	0.14	121.53	1.49E-14
1721744	3.00	0.09	35.26	6.71E-10
1924344	7.76	0.17	45.89	7.18E-11
3176845	12.14	0.19	62.97	4.70E-12
2286809	8.52	0.25	34.50	8.07E-10
1985244	4.68	0.16	29.30	3.16E-09
1570042	3.22	0.12	27.83	4.85E-09
2079906	2.69	0.14	19.61	8.40E-08
2852042	5.26	0.24	21.94	3.40E-08
1319020	4.01	0.15	26.40	7.49E-09
1572555	7.76	0.23	34.07	8.98E-10
782235	6.11	0.42	14.43	1.58E-06
1314882	6.00	0.29	20.42	1.08E-07
1403636	3.69	0.15	24.94	1.20E-08
1968921	1.21	0.06	20.09	6.93E-08
1558081	3.17	0.15	20.86	5.12E-08
2495131	4.68	0.17	26.87	6.48E-09
4049957	9.52	0.39	24.32	1.47E-08
1686585	6.01	0.18	33.56	1.02E-09
2696735	8.26	0.23	36.41	5.12E-10
1720149	5.48	0.24	22.65	2.63E-08
1866751	8.79	0.28	31.47	1.74E-09
1851696	5.84	0.12	50.27	3.28E-11
93820	7.72	0.34	22.63	2.65E-08
2368282	0.10	0.06	1.69	1.63E-01
2831248	1.22	0.03	35.01	7.14E-10
182802	0.82	0.09	8.93	4.98E-05
1003884	2.80	0.10	27.91	4.74E-09
1120	0.99	0.04	24.45	1.41E-08
1308542	1.47	0.05	26.85	6.52E-09
3820761	6.10	0.25	24.89	1.22E-08
1999167	3.20	0.16	20.08	6.95E-08
1522716	4.89	0.22	21.84	3.53E-08
1612969	1.71	0.05	34.60	7.88E-10
337500	1.99	0.09	22.42	2.85E-08
1285380	1.08	0.05	23.71	1.81E-08
1636639	2.34	0.06	37.45	4.04E-10
1985870	1.91	0.08	23.67	1.83E-08
1677936	15.10	0.56	26.99	6.26E-09
910612	13.68	0.66	20.60	5.65E-08
2594407	14.00	0.62	22.42	2.85E-08
963536	7.29	0.14	51.69	2.59E-11
2252895	6.28	0.23	26.86	6.50E-09

Table 4

Clone ID	Var. Betw.	Var. Within	F	Probability
2804190	1.78	0.05	32.78	1.24E-09
1998428	7.92	0.08	93.61	1.48E-13
1800114	4.50	0.18	24.96	1.19E-08
1806769	6.28	0.19	33.07	1.15E-09
2474163	3.77	0.16	23.26	2.11E-08
1435374	7.49	0.28	26.56	7.12E-09
434377	3.63	0.17	21.28	4.35E-08
2121863	4.60	0.09	50.89	2.96E-11
1597231	4.47	0.13	35.24	1.27E-09
4174437	13.13	0.41	32.27	1.41E-09
2182901	13.23	0.39	33.98	9.18E-10
1747979	1.80	0.05	36.38	5.17E-10
1630553	4.76	0.11	41.76	1.60E-10
478960	2.02	0.06	33.56	1.02E-09
2132487	2.54	0.10	26.35	7.61E-09
2921152	9.32	0.12	76.38	8.76E-13
1846428	6.42	0.10	67.23	2.66E-12
2796143	3.39	0.10	32.61	1.30E-09
1805613	3.54	0.14	25.38	1.04E-08
1431273	6.39	0.12	53.05	2.07E-11
1804662	2.47	0.11	21.54	3.95E-08
2921194	4.16	0.06	71.14	1.63E-12
395368	7.68	0.16	47.72	5.14E-11
2182861	1.49	0.07	21.65	3.79E-08
1806436	2.67	0.08	33.51	1.93E-09
2922143	8.80	0.24	36.96	4.51E-10
1696001	3.19	0.10	33.34	1.08E-09
1635004	9.35	0.40	23.56	1.91E-08
2132752	8.31	0.35	24.01	1.63E-08
1734393	9.31	0.18	52.61	2.22E-11
4179338	23.18	0.38	60.49	6.66E-12
1427623	8.58	0.27	31.57	3.16E-09
3320987	8.40	0.23	35.93	5.74E-10
2239819	7.95	0.12	65.54	3.32E-12
876720	3.67	0.03	111.15	3.27E-14
1910091	1.78	0.05	37.15	4.32E-10
2174130	1.34	0.05	24.70	1.30E-08
2219077	1.77	0.10	17.69	3.33E-07
1965041	2.32	0.11	21.88	3.48E-08
1649959	4.06	0.08	48.69	4.32E-11
1222317	2.48	0.12	19.82	7.71E-08
2510171	5.01	0.33	15.39	9.76E-07
1988674	2.89	0.13	22.61	2.66E-08
1672640	3.40	0.17	20.16	6.71E-08
1749417	4.09	0.11	36.76	4.72E-10
1926543	1.80	0.06	28.63	3.83E-09
1504934	7.25	0.13	57.58	1.02E-11
2512879	6.33	0.10	61.41	5.84E-12
1359832	9.34	0.25	37.96	3.60E-10
1583076	6.62	0.15	45.58	7.60E-11
139838	9.81	0.11	91.36	1.83E-13
1344654	5.30	0.10	50.79	3.01E-11
2513979	11.65	0.18	64.60	3.77E-12
2369312	12.93	0.31	41.06	1.85E-10
2048364	11.94	0.24	50.57	3.12E-11
85246	15.28	0.19	80.75	5.39E-13
166337	6.51	0.18	36.47	5.06E-10

Table 4

Clone ID	Var. Betw.	Var. Within	F	Probability
138274	2.89	0.06	50.18	3.34E-11
1633340	5.88	0.08	73.59	1.21E-12
1982416	4.23	0.10	43.11	1.22E-10
946822	0.84	0.04	23.67	1.83E-08
2517330	1.21	0.04	30.23	2.44E-09
2516489	3.69	0.08	48.89	4.17E-11
88741	6.33	0.16	39.74	2.45E-10
168865	7.32	0.11	69.05	2.11E-12
231779	2.11	0.03	65.83	3.20E-12
234123	2.35	0.05	45.40	7.87E-11
1833801	2.53	0.07	34.08	1.67E-09
1923613	3.53	0.08	43.51	1.13E-10
2058620	2.22	0.08	28.30	4.23E-09
1930954	2.94	0.10	28.90	6.55E-09
1511658	15.98	0.55	29.28	3.18E-09
2590673	5.18	0.10	53.53	1.91E-11
1995380	3.92	0.13	29.18	3.27E-09
167409	13.73	0.23	59.33	7.87E-12
1846226	2.37	0.05	43.87	1.05E-10
2052185	12.30	0.22	55.64	1.37E-11
2517389	6.16	0.09	68.31	2.32E-12
911015	4.29	0.11	39.90	2.36E-10
604856	3.92	0.60	6.50	3.91E-04
1448718	6.21	1.54	4.04	5.66E-03
2517268	6.93	0.10	68.50	2.26E-12
167134	7.22	0.12	60.59	6.57E-12
2843638	2.14	0.05	41.93	1.55E-10
1813269	9.85	0.34	29.17	3.29E-09
1861971	16.91	0.16	103.79	5.97E-14
2005973	4.25	0.21	19.94	7.33E-08
2515729	9.83	0.15	66.87	2.79E-12
2132356	4.65	0.08	56.22	2.42E-11
1001726	3.99	0.07	59.77	1.43E-11
2631845	6.14	1.08	5.70	8.59E-04
86390	4.78	0.24	20.25	6.48E-08
1287840	1.23	0.05	22.75	2.54E-08
2516905	3.22	0.09	35.40	6.50E-10
606122	3.70	0.18	20.77	5.29E-08
3553733	3.67	0.33	11.16	1.05E-05
1813381	9.36	0.21	43.66	1.10E-10
1988108	3.39	0.07	47.86	5.01E-11
1644648	5.80	0.16	36.83	4.65E-10
2516104	12.64	0.21	61.15	6.06E-12
2516448	5.80	0.14	40.95	1.89E-10
2514507	12.10	0.32	37.31	4.17E-10
1427470	3.80	0.09	43.37	1.16E-10
1311471	9.16	0.16	58.72	8.61E-12
195142	10.59	0.10	107.66	4.32E-14
29598	14.19	0.21	67.15	2.69E-12
1968576	4.52	0.10	46.73	6.15E-11
2959255	3.40	0.15	23.02	2.30E-08
446969	9.50	0.36	26.46	7.36E-09
1631511	8.27	0.15	56.65	1.17E-11
1508741	9.90	0.18	54.89	1.54E-11
2513602	8.11	0.16	49.65	3.66E-11
1981145	6.12	0.10	64.25	3.95E-12
2103752	3.95	0.07	54.70	1.59E-11

Table 4

Clone ID	Var. Betw.	Var. Within	F	Probability
2658782	9.83	0.26	37.29	7.89E-10
2099420	5.81	0.09	64.47	3.83E-12
637639	7.71	0.26	29.49	3.00E-09
279249	12.48	0.16	77.94	7.35E-13
1379063	6.24	0.20	30.82	2.08E-09
89747	11.71	0.16	75.19	1.01E-12
2515873	6.73	0.12	57.38	1.05E-11
1432372	4.27	0.11	40.13	2.25E-10
1633719	11.91	0.13	89.18	2.26E-13
1712663	4.84	0.14	35.46	6.41E-10
4285203	4.91	0.19	25.41	1.03E-08
1634342	2.22	0.09	24.38	1.44E-08
1418871	3.42	0.05	71.00	1.66E-12
3766382	1.81	0.09	19.98	7.22E-08
943181	3.56	0.10	34.37	8.34E-10
603761	5.67	0.35	16.30	6.27E-07
1297562	4.01	0.17	23.67	1.83E-08
2910715	3.39	0.12	27.78	4.92E-09
196975	1.26	0.05	23.77	3.21E-08
1453049	4.31	0.16	27.74	9.16E-09
1968695	2.01	0.07	30.29	2.40E-09
958344	10.67	0.11	100.25	8.10E-14
2820985	6.64	0.31	21.48	4.04E-08
1633393	2.80	0.04	62.93	4.73E-12
1806451	3.96	0.11	34.69	7.70E-10
2674772	9.66	0.15	64.17	3.99E-12
1376121	3.04	0.05	67.05	2.73E-12
831794	3.93	0.07	54.41	1.66E-11
1427681	8.17	0.15	52.87	2.13E-11
2912830	10.21	0.19	54.94	1.53E-11
504786	6.84	0.14	49.12	4.00E-11
254081	7.89	0.09	91.66	1.78E-13
1330674	7.28	0.27	27.09	6.06E-09
2377834	10.49	0.08	132.69	6.83E-15
2075464	7.13	0.12	61.36	5.89E-12
2383235	8.80	0.14	61.55	5.73E-12
1285503	1.07	0.16	6.72	3.18E-04
2383205	8.56	0.08	103.23	6.26E-14
2015871	0.76	0.28	2.71	3.41E-02
2374046	0.25	0.12	2.16	7.91E-02
1709828	1.54	0.06	25.45	1.01E-08
2061119	1.48	0.07	20.21	6.58E-08
3665105	5.13	0.15	34.78	7.55E-10
2068983	6.01	0.12	49.04	4.06E-11
2242648	4.90	0.12	41.17	1.81E-10
885032	4.17	0.15	27.40	5.52E-09
2383830	9.62	0.36	26.48	7.32E-09
2085191	10.37	0.09	119.16	1.77E-14
2792982	9.77	0.31	31.68	1.65E-09
179929	5.42	0.18	30.27	2.41E-09
2741788	2.88	0.05	53.93	1.79E-11
2373608	7.06	0.22	31.40	1.78E-09
2182095	13.19	0.26	51.25	2.78E-11
2923150	17.49	0.34	50.73	3.04E-11
293495	6.68	0.78	8.52	6.83E-05
4284270	5.92	0.18	33.45	1.05E-09
958923	2.30	0.14	16.98	4.57E-07

Table 4

Clone ID	Var. Betw.	Var. Within	F	Probability
1921393	9.15	0.21	43.78	1.07E-10
1447866	1.52	0.07	21.82	3.56E-08
1666737	2.87	0.14	20.22	6.57E-08
586245	4.67	0.28	16.50	5.71E-07
194162	8.72	0.49	17.90	3.04E-07
243123	4.13	0.14	28.53	3.95E-09
382416	5.66	0.44	12.79	3.89E-06
1852659	4.73	0.19	24.47	1.40E-08
3220181	1.78	0.09	20.77	5.30E-08
1726307	2.30	0.05	45.27	8.05E-11
1904244	1.49	0.09	16.95	4.65E-07
2039955	3.05	0.11	27.19	5.87E-09
2675641	2.23	0.12	19.34	9.39E-08
1412749	2.58	0.06	42.61	1.35E-10
1963854	1.85	0.09	21.03	4.80E-08
2949085	1.39	0.07	20.01	7.15E-08
2963196	4.17	0.14	29.26	3.20E-09
1505977	4.36	0.20	22.00	3.33E-08
1674985	1.33	0.04	31.95	1.54E-09
2109054	2.60	0.12	20.99	4.87E-08
3317039	2.16	0.07	30.17	2.48E-09
2838551	1.00	0.05	19.36	9.30E-08
1477568	3.38	0.17	19.47	8.88E-08
2963871	1.59	0.04	40.44	2.11E-10
1740547	3.18	0.02	133.38	6.53E-15
2292011	5.13	0.49	10.51	1.60E-05
1349484	1.28	0.05	26.46	1.35E-08
1674253	1.65	0.06	28.15	4.41E-09
1932189	5.13	0.24	21.07	4.71E-08
1403041	3.36	0.35	9.69	2.84E-05
1486358	3.26	0.11	29.08	3.37E-09
1439065	1.19	0.05	21.71	6.66E-08
530629	2.83	0.19	14.94	1.22E-06
1672676	4.19	0.08	50.44	3.19E-11
1989129	3.08	0.14	21.69	3.73E-08
1486348	4.85	0.12	40.19	2.22E-10
1397294	3.23	0.18	18.26	2.60E-07
2844322	4.50	0.10	46.79	6.08E-11
1481440	2.69	0.13	20.45	6.01E-08
26459	2.26	0.11	20.02	7.11E-08
1406786	1.74	0.09	20.45	6.01E-08
1485846	13.79	0.09	155.44	1.68E-15
2153242	3.68	0.15	24.68	1.30E-08
2157981	4.43	0.28	15.59	8.82E-07
3244361	2.35	0.09	26.64	6.95E-09
1986737	3.57	0.20	17.42	3.76E-07
2506867	6.38	0.29	21.92	3.42E-08
1211682	5.24	0.10	54.00	1.77E-11
1416354	3.06	0.13	24.40	1.43E-08
2963962	2.75	0.08	34.00	9.13E-10
1761086	3.61	0.09	40.13	2.25E-10
2588552	4.95	0.23	21.57	3.91E-08
1901271	3.46	0.16	22.22	3.07E-08
1740924	2.32	0.08	27.25	5.77E-09
1480159	3.06	0.12	24.71	1.29E-08

Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)											First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain			
2380381	1.65	0.20	-0.89	-0.30	-0.30	0.12	-0.77	0.85	0.83	-0.92	-0.84	-0.84	Heart		
1618422	1.52	-1.16	0.93	0.04	-0.17	0.70	0.17	-1.08	-1.13	-0.18	0.05	0.48	Heart		
2672064	2.10	-0.40	0.69	-0.74	-0.08	-0.44	0.40	-1.42	0.24	-1.66	-0.49	0.40	Heart		
608361	1.98	0.20	0.65	-0.87	0.32	-0.02	-0.06	-0.51	-1.07	0.82	-0.15	-1.00	Heart		
1922596	1.91	1.44	-1.81	-1.69	-0.60	-0.68	-1.61	1.42	0.77	-1.35	-1.47	0.83	Heart		
1850033	3.78	0.67	0.02	-0.40	-0.12	-0.31	-0.67	-0.95	-0.87	-0.47	-0.56	-0.73	Heart		
986987	5.33	0.26	-0.34	-0.64	-0.41	-0.70	-0.54	-0.81	-0.95	-0.75	-0.56	-1.07	Heart		
718807	3.97	-0.17	-0.83	-0.31	-0.45	-0.62	-0.50	-0.83	-1.35	0.24	-0.82	1.20	Heart		
2880435	2.07	-0.58	0.23	-0.49	-0.34	-0.16	-0.31	-0.55	-0.04	-0.49	-0.18	0.14	Heart		
187326	5.39	1.41	-0.40	-0.66	-0.69	-0.88	-0.77	-0.78	-1.37	-0.50	-0.82	-1.07	Heart		
1997963	2.95	2.64	-0.95	-0.90	-0.41	-0.48	-0.93	-1.25	0.31	-0.95	-1.64	-0.07	Heart	Sk Muscle	
467700	4.14	2.42	0.61	-1.24	0.49	-0.07	-1.16	-1.32	-1.39	-0.97	-1.06	-1.56	Heart	Sk Muscle	
57382	4.06	3.92	-0.77	-0.88	-0.29	-0.63	-1.72	-1.75	-0.46	-1.55	-1.72	-0.17	Heart	Sk Muscle	
1222442	2.19	1.68	-1.66	-1.60	-0.29	-0.13	-1.52	0.27	0.90	-1.02	-1.06	-0.16	Heart	Sk Muscle	
4013105	4.01	2.66	0.37	-0.76	-1.22	-1.77	-1.43	-1.92	0.39	-1.66	-0.50	-0.07	Heart	Sk Muscle	
924319	5.61	3.10	-0.95	-0.92	-1.24	-1.38	0.98	-1.30	-1.73	-1.16	-1.26	-1.87	Heart	Sk Muscle	
1645119	2.75	1.84	-0.69	-0.66	-0.80	-0.51	-0.84	-0.30	-0.46	-0.59	-0.65	-0.42	Heart	Sk Muscle	
1379925	3.79	3.38	-0.81	-1.08	-0.95	-1.21	-1.08	-0.90	-0.79	-1.19	-0.46	-0.78	Heart	Sk Muscle	
1900961	3.18	2.30	1.54	-0.62	-0.28	0.35	-1.44	-1.16	-0.96	-1.05	-1.24	-1.33	Heart	Sk Muscle	
3506985	2.79	2.50	-1.72	-2.06	-0.44	0.21	0.37	-1.24	-1.79	-1.64	2.04	-2.23	Heart	Uterus	
551403	1.78	1.40	1.66	-0.15	0.50	-1.20	-1.18	-1.21	-1.16	0.17	-1.32	1.45	Heart	Uterus	Sk Muscle
3948420	2.03	1.78	1.93	0.00	0.87	-1.17	-1.05	-2.16	-1.31	0.19	-1.90	1.84	Heart	Ovary	
1722853	2.41	-0.27	-0.48	1.86	0.26	-0.55	-0.14	-0.54	0.03	-0.94	-1.14	0.03	Heart	Brain	
1557490	2.70	-0.60	0.95	-0.84	-0.11	-1.18	-0.74	-1.75	-0.25	-1.04	-0.07	1.94	Heart	Brain	
3208425	1.31	2.87	-0.39	-0.70	-0.34	-0.05	-0.86	-1.59	0.11	-1.26	-1.36	0.69	Sk Muscle		
1668474	1.37	3.73	-0.50	-0.36	-0.22	-0.86	-0.84	-0.87	-1.10	-0.42	-0.51	-0.18	Sk Muscle		
1622542	-0.24	2.06	-0.66	-0.66	-0.34	0.05	-0.68	-0.79	-0.66	-0.43	0.09	1.19	Sk Muscle		
4014318	-0.24	3.10	0.17	0.10	-0.16	-0.35	-0.41	-0.43	-0.66	-0.16	-0.05	-0.96	Sk Muscle		
2394888	-1.00	3.41	-0.90	-0.84	-1.11	-1.14	-0.12	0.02	0.46	-1.39	-0.77	1.23	Sk Muscle		

Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)														First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain						
1345550	-0.59	6.89	0.09	-0.84	-0.69	-0.92	-0.35	-0.84	-1.39	-1.15	-0.62	-1.12	Sk Muscle					
1719955	1.25	4.16	-1.39	-1.25	-1.08	-1.21	-0.40	-0.09	0.16	-1.84	-1.49	0.30	Sk Muscle					
2256026	0.01	3.03	0.13	-0.10	-0.46	-0.37	-0.48	-0.32	-0.75	0.13	-0.27	-0.64	Sk Muscle					
1538086	0.13	2.04	-0.91	-0.74	-0.65	-0.73	-1.04	1.46	0.17	0.26	-0.81	-0.01	Sk Muscle					
958633	0.99	1.57	0.44	0.74	-0.61	-0.63	-0.53	-0.77	0.06	0.30	-0.77	-0.16	Sk Muscle					
2635943	0.59	5.72	-0.26	-0.76	-0.34	-0.47	-1.10	-0.92	-1.21	-1.32	-0.94	-0.57	Sk Muscle					
121888	1.23	5.92	-0.61	-0.55	-0.43	-1.24	-0.92	-0.72	-1.13	-0.90	-0.96	-0.99	Sk Muscle					
1627492	0.30	2.40	0.10	0.85	-0.41	-0.15	-0.69	-0.90	-0.11	-0.83	-0.73	0.08	Sk Muscle					
4073867	0.35	1.62	-0.56	-0.18	-0.45	-0.18	-1.16	1.37	0.61	-0.67	-0.73	-0.92	Sk Muscle					
2190170	0.20	2.24	0.39	0.43	-0.31	-0.25	-0.28	-1.05	-0.29	-1.01	-0.44	0.01	Sk Muscle					
972224	0.44	6.70	0.13	-0.38	-0.09	-0.68	-0.89	-1.14	-1.21	-1.45	-1.08	-1.56	Sk Muscle					
1413644	0.61	3.15	0.36	-0.74	-0.26	-0.14	-1.19	-1.37	-0.85	-1.26	-0.96	1.36	Sk Muscle					
1538224	1.11	1.71	-0.07	-0.33	-0.82	-0.61	0.06	-0.11	-0.11	-0.65	-0.70	-0.44	Sk Muscle					
2623268	0.14	2.07	0.97	0.23	0.65	-0.15	-0.61	-1.52	-0.23	-1.65	-0.74	0.44	Sk Muscle					
1665533	0.46	1.93	-0.12	-0.24	-0.46	-0.41	0.02	-0.83	0.02	-0.47	-0.14	-0.41	Sk Muscle					
981484	-0.04	2.58	-0.54	-0.60	-0.05	-0.33	-0.40	-0.41	-0.49	-0.10	-0.28	0.00	Sk Muscle					
973629	0.70	6.01	-0.53	-0.77	-0.35	-0.67	-1.03	-1.15	-1.02	-1.01	-0.55	-1.09	Sk Muscle					
1539638	-0.34	1.69	0.64	0.51	0.05	0.28	-0.04	-1.22	0.04	-1.21	-0.58	-0.06	Sk Muscle					
3015758	0.08	5.84	-0.58	-0.53	-0.48	-0.99	-0.83	-0.67	-1.21	0.29	-0.45	-0.98	Sk Muscle					
2832314	0.76	1.81	0.00	-0.19	-0.19	-0.23	-0.02	-2.79	0.85	-2.07	-0.55	1.05	Sk Muscle					
1702996	0.08	2.32	1.21	-0.20	0.46	-0.04	-0.39	-1.14	-0.50	-0.64	-0.92	-0.25	Sk Muscle					
839947	-0.11	2.43	-1.06	-1.33	-0.14	-0.37	-0.19	-0.25	-0.44	-0.37	-0.19	0.48	Sk Muscle					
1867522	0.02	7.47	-1.55	-1.81	-0.56	-1.54	-0.75	-0.41	-0.97	-1.23	-0.73	-0.67	Sk Muscle					
1987831	0.25	1.63	0.00 x		-0.32	-0.37	-0.50	-1.00	-0.76 x		-0.28	1.24	Sk Muscle					
2639708	0.36	5.54	-0.42	-0.82	-0.66	-0.56	-0.83	-0.92	-1.06	-0.53	-0.56	-0.79	Sk Muscle					
973815	0.84	5.96	-0.04	-0.41	-0.44	-0.88	-0.80	-1.33	-1.43	-0.90	-0.80	-0.80	Sk Muscle					
169884	2.50	4.51	-1.30 x		-0.70	-0.90	-1.18	-0.81	-1.64 x		-0.79	-0.38	Sk Muscle				Heart	
2638235	2.16	2.34	-0.60	-0.88	0.18	-0.67	0.02	-0.69	-0.48	-0.49	-0.92	-1.02	Sk Muscle				Heart	

Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)											First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain			
305198	3.03	3.74	-0.67	-1.25	-0.33	-0.91	-0.81	-0.94	-1.29	-0.71	-0.83	-0.67	Sk Muscle	Heart	
57997	1.82	4.08	-0.15	-0.67	0.29	-0.88	-1.08	-0.88	-0.96	-0.27	-0.80	-1.08	Sk Muscle	Heart	
986558	3.20	3.44	-0.10	-0.43	-0.21	-0.71	-1.21	-1.40	-0.84	-1.21	-1.23	-0.50	Sk Muscle	Heart	
224996	1.53	4.47	1.46	-0.90	0.54	-0.03	-0.35	-1.98	-1.88	-1.95	-1.36	-0.79	Sk Muscle	Heart	
661259	1.60	1.81	-0.74	-1.14	-0.35	-0.84	-1.33	1.29	0.57	-1.71	-1.45	0.03	Sk Muscle	Heart	
3246379	1.70	3.14	-0.33	-0.97	-0.50	-0.65	-0.87	-1.07	-0.99	-1.10	-0.72	0.71	Sk Muscle	Heart	
78783	1.54	2.12	0.11	-0.01	0.37	-0.10	0.32	-1.63	-0.15	-1.48	-0.19	-1.74	Sk Muscle	Heart	
2639181	5.65	6.89	-1.34	-1.35	-1.79	-1.28	-1.66	-1.50	-1.99	-1.38	-1.14	-1.97	Sk Muscle	Heart	
1672467	3.49	4.45	-0.15	-1.23	-0.83	-0.95	-1.54	-0.15	-1.51	-0.47	-1.33	-1.24	Sk Muscle	Heart	
2950063	3.16	5.44	-0.22	-0.26	-0.51	-1.63	-0.90	-0.76	-1.76	-0.92	-1.16	-1.50	Sk Muscle	Heart	
3288518	2.63	7.79	-0.41	-0.89	-1.04	-1.89	-1.12	-1.46	-1.24	-1.58	-1.02	-1.90	Sk Muscle	Heart	
1841110	4.64	6.08	-1.14	-1.40	-0.42	-1.46	-0.88	-1.08	-2.10	-1.61	-1.08	-2.07	Sk Muscle	Heart	
1368173	1.89	3.01	-0.19	0.11	-0.63	-0.64	-0.91	-1.79	0.12	-1.53	-1.20	0.55	Sk Muscle	Heart	
1813409	1.60	2.68	-0.93	-1.60	0.42	-0.45	-1.21	-0.64	1.07	0.10	-1.32	-0.89	Sk Muscle	Heart	
58309	4.05	5.75	-1.98	-1.99	-0.46	-1.25	-1.29	-0.93	-0.92	-1.29	-1.32	-1.37	Sk Muscle	Heart	
1721744	1.83	1.95	0.38	-0.19	-0.45	-0.66	-0.71	-0.56	-0.86	0.45	-1.23	0.20	Sk Muscle	Heart	
1924344	0.70	4.20	1.63	-0.30	0.40	0.16	-1.00	-1.16	-1.79	-1.41	-0.50	-1.39	Sk Muscle	Uterus	
3176845	0.92	4.37	3.13	1.01	1.00	0.65	-1.00	-2.44	-1.51	-2.31	-1.45	-1.86	Sk Muscle	Uterus	
2286809	1.31	3.52	-1.62	-1.36	-0.75	-0.60	-2.37	0.81	1.69	-1.36	-2.06	0.19	Sk Muscle	Kidney	
1985244	0.70	3.13	-0.61	-0.07	-0.79	-0.52	-0.92	0.70	-0.16	1.73	-1.64	-0.93	Sk Muscle	Pancreas	
1570042	0.42	2.41	-0.39	-0.57	-0.66	-0.90	-0.81	-0.61	-0.89	-0.50	-0.16	1.61	Sk Muscle	Brain	
2079906	-0.86	-0.62	2.72	1.19	0.56	1.24	0.06	-1.84	-0.55	-1.40	-0.34	-0.55	Uterus		
2852042	-1.06	-1.16	3.56	0.89	1.43	1.17	0.06	-1.84	-0.72	-1.09	-0.57	0.86	Uterus		
1319020	1.84	0.73	2.47	1.35	0.13	-0.22	-0.28	-1.91	-0.15	-1.51	-1.05	-0.65	Uterus	Heart	
1572555	1.86	1.72	2.67	0.89	0.98	1.57	-0.79	-2.58	-0.92	-1.14	-1.30	-1.91	Uterus	Heart	
782235	-0.33	-0.47	4.14	2.86	0.71	0.25	0.87	-1.33	-0.49	-1.20	-0.50	-1.77	Uterus	Ovary	Sk Muscle
1314882	0.56	0.23	3.44	2.53	0.63	0.64	0.88	-1.73	-0.91	-1.39	-0.80	-1.95	Uterus	Ovary	Intestine
1403636	-0.25	0.94	2.31	2.07	0.74	0.56	0.00	-1.93	-1.36	-1.75	-0.46	0.35	Uterus	Ovary	



Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)												First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain				
1968921	0.01	-0.21	1.86	1.57	0.08	0.19	-0.26	-0.81	-0.09	-0.74	0.14	-0.54	Uterus	Ovary		
1558081	0.59	0.19	2.44	1.74	0.66	0.26	0.55	-1.56	-0.11	-1.01	-0.71	-1.52	Uterus	Ovary		
2495131	0.58	1.51	2.74	2.30	0.11	0.08	0.45	-1.62	-1.36	-2.38	-0.87	-0.64	Uterus	Ovary	Sk Muscle	
4049957	-0.58	-0.62	4.73	2.60	1.88	1.84	0.24	-2.47	-0.57	-2.17	-0.76	-1.63	Uterus	Ovary	Stomach	Intestine
1686585	-0.02	1.11	2.99	2.81	0.94	-0.10	-1.37	-2.09	1.54	-1.33	-1.27	-0.90	Uterus	Ovary	Kidney	
2696735	0.30	-0.61	4.57	0.80	2.40	1.91	-1.06	-1.57	-1.14	-1.02	-1.03	-1.37	Uterus	Stomach	Intestine	
1720149	-1.28	-1.13	3.60	1.31	1.48	1.87	-0.03	-0.93	-0.33	-1.69	-0.53	-0.91	Uterus	Intestine		
1866751	-0.77	-0.89	4.21	0.72	2.33	2.66	-0.55	-1.78	-1.11	-1.54	-0.75	-1.70	Uterus	Intestine	Stomach	
1851696	0.88	-0.24	2.62	1.21	0.91	1.36	1.71	-1.29	-1.08	-1.86	-2.05	-1.41	Uterus	Lung		
93820	-0.71	-0.63	3.62	-0.24	-0.98	-0.88	-1.47	-1.08	1.31	-1.07	-1.11	3.25	Uterus	Brain		
2368282	-0.17	0.06	-0.02	4.25	0.01	-0.19	-0.21	-0.12	-0.47	0.02	0.09	-0.41	Ovary			
2831248	-0.15	-0.19	1.08	2.34	0.17	-0.15	0.35	-1.02	0.19	0.12	0.07	-0.76	Ovary			
182802	-0.14	0.11	-0.44	4.23	0.41	1.07	-0.55	-0.32	-0.32	-0.15	-0.72	-0.46	Ovary			
1003884	0.53	-0.54	1.46	1.72	0.23	0.36	0.79	-1.48	1.00	-0.77	-0.36	-1.73	Ovary			
1120	-0.29	0.20	0.65	2.02	-0.07	-0.21	-0.17	-0.43	0.16	1.22	0.27	-1.00	Ovary			
1308542	1.52	-0.36	-0.69	1.55	0.54	-0.35	-0.37	0.46	-0.67	0.90	-0.41	-0.53	Ovary	Heart		
3820761	1.30	0.65	2.23	2.98	0.57	0.49	0.70	-1.45	0.35	-1.14	-2.57	-1.94	Ovary	Uterus		
1999167	0.22	-1.37	1.62	1.66	0.34	0.15	-0.09	1.02	1.13	-1.40	-0.50	-1.94	Ovary	Uterus		
1522716	0.17	0.12	2.47	3.45	0.55	0.14	0.67	-2.58	-0.51	-1.39	0.48	-1.19	Ovary	Uterus		
1612969	0.08	-0.20	0.68	3.45	-0.22	-0.51	-0.54	-0.30	-0.32	1.82	-0.24	-0.05	Ovary	Pancreas		
337500	-1.02	-1.21	1.12	2.43	0.43	0.18	-0.10	-0.22	0.34	1.62	0.42	-0.77	Ovary	Pancreas		
1285380	-0.14	-0.45	-0.35	-0.62	2.14	-0.17	0.32	-0.41	-0.22	-0.25	0.31	-0.14	Stomach			
1636639	0.88	-0.51	0.87	-0.52	2.13	0.64	0.07	-0.88	-1.14	1.29	-0.67	-0.66	Stomach			
1985870	-0.45	-0.60	-0.43	-0.58	1.92	0.73	0.58	-0.68	-0.83	-0.75	1.15	-0.45	Stomach			
1677936	-0.85	-0.24	-0.52	-0.58	8.48	0.86	-0.74	-0.72	-1.47	-0.51	-0.32	-1.46	Stomach			
910612	-0.22	0.01	-0.41	-0.27	8.04	0.79	-0.76	-1.18	-1.37	-0.76	-0.67	-1.33	Stomach			
2594407	-1.02	-0.40	-0.99	-1.22	8.00	0.52	1.10	-1.00	-0.98	-0.95	-0.79	-1.38	Stomach			
963536	-0.15	-0.04	-0.54	-0.74	5.80	0.89	-0.64	-0.57	-1.05	-0.69	-0.61	-0.86	Stomach			

Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)												First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain	First	Second	Third	Fourth
2252895	-0.27	0.21	-0.77	-0.93	4.13	2.64	-0.95	-0.99	-0.64	-0.75	-0.72	-0.94	Stomach	Intestine		
2804190	-0.39	-0.33	-0.36	-0.26	2.01	1.57	-0.07	-0.69	-0.60	-0.46	-0.04	-0.32	Stomach	Intestine		
1998428	-1.03	-0.23	-0.85	-0.77	4.74	2.37	1.08	-0.82	-1.01	-0.20	-0.92	-1.70	Stomach	Intestine		
1800114	-1.28	-0.93	-0.94	-1.09	2.37	2.34	0.79	-0.70	1.01	-1.09	-0.41	-1.05	Stomach	Intestine		
1806769	-0.94	-0.15	-0.80	-0.59	3.14	2.27	2.06	-0.91	-0.96	0.18	-1.33	-1.45	Stomach	Intestine	Lung	
2474163	-0.62	0.16	-1.40	-1.02	2.85	-1.12	-0.49	0.44	1.65	-0.33	-1.20	0.67	Stomach	Kidney		
1435374	-1.67	-1.61	-1.56	-0.58	2.16	1.78	1.35	1.62	1.25	1.83	-1.16	-2.36	Stomach	Pancreas		Liver
434377	0.10	0.13	0.04	-0.71	-0.81	2.29	1.24	-0.86	-1.03	-1.43	0.94	-1.59	Intestine			
2121863	-0.05	0.06	1.20	-0.05	1.20	2.51	0.88	-1.69	-0.39	-1.93	-0.40	-1.85	Intestine			
1597231	1.33	0.66	-1.34 x		-0.57	1.71	-1.23	1.43	-1.18 x		-1.38	-0.08	Intestine			
4174437	-0.99	-0.03	-0.66	-0.58	0.09	6.41	-0.38	-0.99	-1.54	-1.25	-0.22	-1.27	Intestine			
2182901	-0.75	0.32	-0.21	-0.72	-0.06	6.43	-0.72	-0.99	-1.49	-1.22	-0.72	-1.26	Intestine			
1747979	-0.87	-0.68	0.13	-0.34	0.36	1.62	-0.16	-0.69	-0.63	-0.34	1.30	0.02	Intestine			
1630553	-0.37	-0.17	-0.12	-1.19	-0.64	3.81	0.37	-0.79	-0.41	-0.49	-0.87	-0.51	Intestine			
478960	-0.60	-0.21	-0.65	-0.83	0.72	1.91	0.16	-0.58	0.73	1.08	-0.60	-0.94	Intestine			
2132487	-0.40	0.07	-0.72	-0.81	0.25	2.68	-0.35	-0.03	-0.87	0.78	-0.35	-0.40	Intestine			
2921152	-0.42	-0.07	-0.85	-0.71	-0.15	5.47	-0.61	-0.68	-1.00	-0.81	-1.03	-0.48	Intestine			
1846428	-1.05	0.55	-0.20	-0.37	-0.83	4.38	-0.38	-0.08	-0.52	-0.32	-0.93	-1.05	Intestine			
2796143	-0.68	-1.30	-1.58	-0.15	0.81	1.58	1.05	-1.55	1.36	0.91	-0.26	0.06	Intestine			
1805613	-0.59	0.35	-0.38	-0.42	0.01	3.29	-0.32	-0.42	-0.90	-0.50	-0.34	-0.51	Intestine			
1431273	-0.26	-0.20	-0.81	-0.69	0.00	4.52	-0.51	-0.74	-0.97	-0.09	-0.44	-0.59	Intestine			
1804662	-0.24	-0.36	-0.81	-0.68	-0.19	2.23	-0.94	1.11	0.51	-0.38	-0.66	-0.63	Intestine			
2921194	0.25	-0.38	1.06	1.27	1.00	2.36	0.74	-1.91	-0.25	-1.42	-0.70	-1.45	Intestine			
395368	-1.25	-0.59	-1.08	-0.91	0.01	4.57	-0.26	-0.95	1.19	-0.82	-0.14	-1.28	Intestine			
2182861	-0.11	0.17	-0.19	-0.25	-0.24	2.15	-0.52	-0.18	-0.31	-0.13	-0.27	-0.51	Intestine			
1806436	-0.44	-0.77	-0.19 x		-0.74	2.24	-0.94	0.60	0.60 x		-0.43	-0.24	Intestine			
2922143	-0.27	-0.56	-1.19	-1.48	0.57	5.23	-0.85	-0.43	-0.99	-0.80	-0.72	-0.23	Intestine			
1696001	-0.18	-0.63	-0.91	-1.24	-0.11	3.01	-0.75	0.09	0.41	0.15	-0.40	-0.51	Intestine			

Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)													First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain					
1635004	-1.17	-0.42	-1.16	-0.93	2.81	4.64	-0.85	0.03	-1.58	0.01	-0.20	-1.23	Intestine	Stomach			
2132752	-1.41	-0.38	-0.65	-0.11	3.20	4.19	-0.36	-1.12	-0.55	-0.62	-0.60	-1.22	Intestine	Stomach			
1734393	-0.90	-0.40	-1.03	-0.46	3.07	4.66	-0.97	-0.75	-1.25	0.05	-0.88	-0.74	Intestine	Stomach			
4179338	-0.66	-1.35	-2.01	-2.02	-0.67	5.83	-1.52	5.72	-1.81	-1.66	-1.65	-1.55	Intestine	Liver			
1427623	-0.78	-0.68	-0.96 x		-0.38	3.63	-1.29	2.56	-0.33 x		-1.11	-1.11	Intestine	Liver			
3320987	-0.84	-0.75	0.84	-1.27	-1.16	3.89	-1.23	-0.15	2.47	-1.62	-0.22	-1.99	Intestine	Kidney			
2239819	-0.98	-0.11	-1.12	-1.14	-0.85	3.63	-1.12	-0.88	2.68	2.13	-1.02	-1.21	Intestine	Kidney			Pancreas
876720	-0.41	-0.37	-0.42	-0.58	-0.57	-0.44	3.45	-0.26	-0.50	-0.42	0.01	-0.49	Lung				
1910091	-0.31	-0.05	-0.23	-0.64	-0.47	-0.31	2.13	-0.60	-0.47	-0.28	-0.43	0.81	Lung				
2174130	-0.54	-0.18	-0.05	0.96	0.69	0.19	1.53	-0.72	-0.44	-0.67	0.40	-0.76	Lung				
2219077	0.35	-0.33	-0.02	0.05	-0.32	-0.42	2.07	-0.17	-0.36	-0.44	-0.16	-0.62	Lung				
1965041	0.63	0.06	0.31	-0.75	-0.84	-1.16	1.83	-0.93	0.76	-0.75	0.54	-0.88	Lung				
1649959	-0.98	-0.10	-0.62	-0.99	0.86	0.64	2.91	-0.32	0.71	-0.38	-1.27	-1.30	Lung				
1222317	0.01	-0.03	0.56	-0.98	0.16	0.13	2.15	-1.40	-0.21	-0.91	0.61	-1.11	Lung				
2510171	-0.48	-0.41	-1.08	-1.20	0.71	-0.67	3.38	0.43	0.16	-0.20	-0.94	-0.74	Lung				
1988674	-0.75	-0.48	-0.40	-0.64	-0.16	0.02	2.93	-0.47	-0.67	-0.51	0.42	-0.25	Lung				
1672640	1.48	0.55	1.07	0.52	-0.27	-0.50	1.62	-1.65	-1.31	-1.22	0.51	-1.00	Lung				
1749417	-1.09	-1.44	-0.37	-0.36	0.29	-0.28	2.35	-0.21	2.23	-0.89	-0.37	-0.72	Lung				
1926543	-0.06	-0.67	-0.86	-0.64	-0.25	-0.01	-0.41	2.06	0.89	-0.32	-0.37	-0.37	Liver	Kidney			
1504934	-0.39	0.09	-0.47	-0.20	-0.82	-0.85	-0.90	4.76	0.13	-0.53	-0.75	-0.99	Liver				
2512879	-0.69	-0.39	-0.31	-0.51	0.76	0.37	0.99	3.69	-0.67	-1.60	-0.49	-2.40	Liver				
1359832	-0.16	-0.67	0.00	-0.27	0.65	0.47	1.33	4.09	-0.31	-1.78	-0.93	-3.57	Liver				
1583076	-0.46	-0.73	-0.49	-0.69	1.12	0.66	0.83	3.73	-0.60	-1.46	-0.74	-2.40	Liver				
139838	-0.37	-0.49	-1.25	-0.60	-0.40	-0.70	-0.61	5.66	-0.76	-0.52	-0.51	-0.75	Liver				
1344654	-0.71	-0.46	-0.67	-0.71	-0.83	-0.70	-0.25	3.71	1.41	-0.51	-0.58	-1.02	Liver				
2513979	-0.73	0.06	-0.56	-0.32	-0.56	-1.00	-0.56	6.13	-0.83	-0.91	-0.90	-1.02	Liver				
2369312	-1.30	-0.46	-0.91	0.66	-1.07	-1.77	0.95	5.81	-1.91	-1.74	1.06	-0.70	Liver				
2048364	-0.83	-0.10	-1.45	-1.20	-1.00	-0.63	-0.30	6.12	-0.95	-0.93	-1.18	0.20	Liver				

Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)												First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain				
85246	-0.90	-0.33	-1.05	-0.65	-0.54	-1.19	-0.63	7.05	-0.41	-0.51	-0.92	-1.21	Liver			
166337	-0.77	-0.06	-0.10	-0.24	-0.13	-0.48	-0.26	4.48	-1.20	-0.24	-0.25	-1.16	Liver			
138274	-0.27	0.08	-0.38	-0.46	-0.38	-0.40	-0.34	3.03	-0.75	-0.29	-0.24	-0.35	Liver			
1633340	-0.23	-0.59	-0.87	-0.87	-0.40	1.41	-0.99	3.94	-0.90	-0.54	-0.62	-0.69	Liver			
1982416	0.14	-0.76	-1.22	-1.27	-0.21	-0.35	-0.48	3.52	-0.68	-0.22	0.28	-0.22	Liver			
946822	0.16	0.07	-0.09	0.42	-0.27	0.02	-0.39	1.50	-0.21	-0.33	-0.48	-0.46	Liver			
2517330	-0.01	-0.50	-0.73	-0.81	-0.22	0.21	-0.23	1.82	-0.38	0.17	-0.15	0.08	Liver			
2516489	-0.40	-0.39	-0.68	-0.78	-0.68	-0.59	-0.35	3.26	0.82	-0.25	-0.59	-0.53	Liver			
88741	-0.13	-0.06	-0.60	-0.21	-0.79	-0.73	-0.42	4.50	-0.86	-0.21	-0.65	-0.59	Liver			
168865	-0.27	-0.69	-1.16	-1.21	0.52	0.30	-0.67	4.70	-1.02	-0.64	-0.54	-0.78	Liver			
231779	-0.54	-0.69	-0.45	-0.38	0.01	0.56	-0.51	2.40	-0.26	-0.61	0.13	-0.48	Liver			
234123	0.31	-0.76	-1.03	-0.81	-0.44	0.52	-0.73	1.76	1.41	0.26	-0.83	-0.52	Liver			
1833801	-0.31	0.15	-0.66 x	-0.19	0.46	-0.70	2.06	0.74 x		-1.03	-0.80		Liver			
1923613	-0.15	0.15	-1.03	-0.29	-0.46	-1.05	-0.07	2.86	1.15	-0.95	-0.90	-0.57	Liver			
2058620	0.70	0.54	-0.52	0.01	-0.61	-0.42	-0.81	1.67	1.17	-0.84	-0.78	-1.05	Liver			
1930954	0.07	0.28	-0.37 x	-0.24	0.14	-0.72	2.27	0.59 x		-0.94	-1.29		Liver			
1511658	-0.75	-0.43	-1.06	-0.94	0.28	-1.17	-1.10	7.16	-0.48	-0.40	-0.93	-1.32	Liver			
2590673	-0.13	-0.44	-0.77	-0.63	0.06	-0.72	-0.34	4.00	0.15	-0.16	-0.92	-0.85	Liver			
1995380	-0.93	-1.08	-0.99	0.65	0.19	0.19	1.17	2.39	1.01	-0.29	-1.76	-0.58	Liver			
167409	-0.89	-0.47	-0.85	-0.38	0.85	-0.77	-1.25	6.45	-1.16	1.26	-0.81	-1.41	Liver			
1846226	-1.25	-1.28	0.40	0.85	0.01	0.48	-0.40	1.63	0.90	-0.99	-0.82	0.52	Liver			
2052185	-0.85	-0.01	-0.56	-0.73	-1.03	-0.64	-0.53	6.30	-1.16	-0.31	-0.70	-1.00	Liver			
2517389	-0.26	-0.47	-0.83	-0.79	-0.26	-0.65	-0.78	4.45	-0.06	-0.32	-0.49	-0.66	Liver			
911015	-0.98	-0.44	-0.70	-0.54	-0.20	0.01	-0.55	3.18	1.44	-0.45	-0.64	-1.08	Liver			
604856	0.16	-0.30	-0.65	-0.50	0.26	-0.75	0.25	3.02	-0.52	-0.38	-0.17	-1.14	Liver			
1448718	-0.85	0.04	-0.15	-0.04	-0.03	-0.43	-0.67	3.99	-0.81	-0.04	-0.40	-0.72	Liver			
2517268	-0.12	-0.10	-0.69	-0.81	-0.19	-0.61	-0.76	4.71	-1.02	-0.48	-0.41	-0.66	Liver			
167134	0.28	-0.46	-1.10	-1.18	0.17	-0.47	-0.91	4.71	-1.04	-0.43	-0.46	-0.50	Liver			

Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)													First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain					
2843638	-0.16	-0.58	-0.31	0.59	-0.17	-0.39	0.38	2.48	-0.65	-0.43	-0.41	-0.39	Liver				
1813269	-0.56	-0.93	0.88	-0.91	-0.77	0.22	1.28	4.75	-2.04	-1.42	0.15	-2.16	Liver				
1861971	-0.65	-0.21	-0.56	-0.61	-0.20	-1.47	0.00	7.31	-1.51	-1.21	-1.06	-1.30	Liver				
2005973	-0.27	-0.74	-1.13	-1.29	0.50	0.27	-0.45	3.49	-0.02	-0.37	-0.60	-0.70	Liver				
2515729	-0.71	-0.50	-1.08	-1.45	-0.83	-0.63	-0.89	5.52	0.49	-0.02	-1.14	-0.37	Liver				
2132356	-0.74	0.06	-0.49 x	-0.61	-0.67	-0.57	3.29	0.72 x		-0.65	-0.70		Liver				
1001726	-0.45	-0.48	-0.42 x	-0.56	-1.05	-0.05	2.77	1.16 x		-1.01	-0.24		Liver				
2631845	-0.79	0.09	-0.72	-0.89	0.08	0.12	0.59	3.77	-0.51	-0.95	-0.86	-1.38	Liver				
86390	-0.45	0.02	-0.22	-0.11	-0.06	-0.56	-0.31	3.84	-1.03	-0.48	-0.14	-1.00	Liver				
1287840	0.02	-0.31	-0.17	0.16	0.09	0.48	-0.54	1.54	0.51	-0.56	-0.81	-0.68	Liver				
2516905	-0.05	-0.27	-0.75	-1.04	-0.09	-0.45	-0.48	3.16	-0.72	0.02	-0.21	-0.09	Liver				
606122	-0.25	-0.44	-0.74	-0.70	-0.15	-0.22	-0.43	3.46	-0.52	-0.12	-0.33	-0.39	Liver				
3553733	-0.65	0.18	-0.81	-0.94	-0.35	-0.51	-0.17	3.08	-0.01	-0.41	-0.43	-0.27	Liver				
1813381	0.51	-0.05	-0.60	-0.21	-0.75	-1.01	-0.98	5.36	-0.91	-0.21	-0.67	-1.19	Liver				
1988108	-1.05	-0.87	1.08	2.06	-0.33	-0.38	-0.08	2.29	0.39	1.17	-0.43	-1.45	Liver				
1644648	-1.33	-0.54	-1.07	1.84	0.38	1.65	-1.07	2.45	1.62	0.38	-1.53	-1.54	Liver	Ovary			
2516104	-0.66	-0.08	-0.73	-0.39	-0.76	3.04	-1.33	5.15	-1.62	-1.11	-1.40	-1.62	Liver	Ovary	Intestine		
2516448	-0.37	0.11	-0.57	-0.63	-1.01	1.62	-0.90	3.73	-1.10	-0.45	-0.72	-0.95	Liver	Intestine	Intestine		
2514507	-1.15	0.20	-0.32	-0.32	-0.88	2.14	-1.21	5.48	-1.52	-0.92	-1.19	-1.54	Liver	Intestine	Intestine		
1427470	-0.58	-0.74	-1.04	0.86	0.53	1.70	-0.32	2.46	-1.31	0.65	-0.55	-0.83	Liver	Intestine	Intestine		
1311471	-1.04	-0.28	-0.17	-0.39	-0.48	1.74	-1.07	4.88	-1.26	-0.44	-1.00	-1.26	Liver	Intestine	Intestine		
195142	-1.29	-0.57	-1.38	-1.27	1.24	1.93	-1.15	5.03	-0.97	-0.64	-1.10	-1.15	Liver	Intestine	Intestine		
29598	-1.80	-0.91	-1.26	-0.33	1.25	3.21	-1.11	5.21	-0.71	-1.12	-1.22	-2.18	Liver	Intestine	Intestine		
1968576	-1.18	-0.86	-1.29	-1.09	0.29	1.55	0.55	2.33	1.23	-0.78	-0.79	-1.54	Liver	Intestine	Intestine		
2959255	-1.41	-0.90	0.18	1.00	-0.78	1.67	-0.64	1.93	-0.05	-1.53	0.76	-0.78	Liver	Intestine	Intestine		
446969	-1.32	-1.59	-1.96	-2.08	-0.05	1.82	0.56	4.44	0.60	-0.90	-0.77	-1.42	Liver	Intestine	Intestine		
1631511	-1.54	-1.21	-1.72	-1.27	-0.69	2.70	-0.22	2.95	2.04	-0.86	-0.78	-1.62	Liver	Intestine	Intestine	Kidney	
1508741	-0.71	-0.32	-1.29	-0.48	-0.93	-1.23	1.65	5.17	-1.18	0.15	-0.85	-0.93	Liver	Lung			

Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)												First	Second	Third	Fourth	
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain					
2513602	-0.49	-0.42	-0.69	-1.00	-0.78	-1.08	-1.29	3.82	2.96	-0.80	-0.87	-1.06	Liver	Kidney			
1981145	-0.64	-0.78	-0.63	-0.88	-0.86	0.71	-0.85	3.15	2.45	-0.88	-1.37	-1.07	Liver	Kidney			
2103752	-0.74	-1.31	-1.12	0.40	-0.16	0.43	0.89	2.03	1.71	0.52	-0.92	-1.53	Liver	Kidney			
2658782	-0.95	-1.13	-1.84 x	-0.82	-0.82	1.01	-1.04	3.58	2.62 x		-1.42	-0.89	Liver	Kidney			
2099420	-0.43	-0.71	-1.28	-1.39	-0.90	-0.51	-0.64	3.00	2.74	-0.25	-0.94	-0.50	Liver	Kidney			
637639	-0.73	-0.60	-0.88	-0.77	-0.72	-1.32	-0.90	3.99	2.55	-0.98	-0.46	-0.88	Liver	Kidney			
279249	-0.49	-0.82	-1.28	-0.90	-0.88	-1.23	-1.55	4.71	3.73	-1.25	-0.94	-1.25	Liver	Kidney			
1379063	-1.65	-0.73	-0.97	-0.74	-0.21	0.25	-0.49	3.34	2.32	-0.29	-0.74	-1.17	Liver	Kidney			
89747	-0.93	-0.66	-1.22	-1.30	-1.00	-1.09	-1.33	4.91	3.18	-0.15	-1.11	-1.01	Liver	Kidney			
2515873	-0.70	-0.44	-0.49	-0.57	-0.97	-1.06	-0.93	3.83	2.18	-1.10	-1.08	-0.26	Liver	Kidney			
1432372	-1.30	-0.96	-1.53	-1.35	0.66	0.84	0.84	2.00	1.75	-0.77	-0.65	-1.22	Liver	Kidney			
1633719	-1.13	-0.86	-1.62	-1.39	-0.98	1.29	-1.48	4.28	3.36	-0.23	-1.44	-1.74	Liver	Kidney			
1712663	-0.56	-0.60	-0.62	-0.44	-0.03	-0.57	0.01	3.71	-0.68	1.95	-0.66	-0.72	Liver	Pancreas			
4285203	-0.83	1.26	-0.25	-1.06	-0.75	-0.17	-0.60	3.32	-0.90	1.96	-0.80	-0.90	Liver	Pancreas			
1634342	-0.85	-1.03	-0.60	-0.22	0.10	0.81	0.08	1.00	1.86	-0.22	-0.71	-0.70	Kidney				
1418871	-0.23	0.00	-0.42	-0.68	-0.45	-0.58	-0.26	-0.18	3.31	-0.27	-0.64	-0.52	Kidney				
3766382	-0.73	-0.61	0.43	-0.51	0.15	0.05	-0.32	-0.43	2.23	-0.14	0.11	-0.47	Kidney				
943181	-0.06	0.01	-0.43	-0.43	-0.30	-0.45	-0.63	-0.65	3.37	-0.23	-0.42	-0.46	Kidney				
603761	-0.82	-0.17	-0.79	x	-0.30	-0.86	-0.54	-0.57	3.77	x	-0.40	0.32	Kidney				
1297562	0.76	-0.53	0.95	-0.21	-1.08	-1.15	1.34	-1.81	2.23	1.04	-0.85	-0.17	Kidney				
2910715	-0.56	-0.53	-0.86	-1.34	0.67	-0.86	0.92	-0.39	2.73	1.00	-0.13	-0.93	Kidney				
196975	0.18	-0.20	-0.48 x		-0.11	-0.20	-0.66	0.50	1.58 x		-0.40	-0.41	Kidney				
1453049	-0.66	-0.55	-0.91 x		1.16	0.46	1.41	-0.76	2.28 x		-0.99	-1.35	Kidney				
1968695	-0.49	-0.44	0.06	-0.18	-0.18	1.44	-0.05	-0.86	1.73	-1.01	0.02	-0.87	Kidney				
958344	-0.03	-0.31	-0.98	-0.89	-0.43	-0.87	-0.96	-0.82	5.82	0.68	-0.89	-0.93	Kidney				
2820985	-1.00	-0.60	-1.08	-0.45	-0.40	2.44	-1.34	0.73	3.34	-0.55	-1.08	-1.16	Kidney	Intestine			
1633393	-0.28	-1.00	-0.69	-0.07	-0.35	1.65	-0.13	-0.88	1.92	0.28	-1.15	0.49	Kidney	Intestine			
1806451	-0.72	-0.15	0.17	-0.68	-0.35	1.88	-0.91	-0.75	2.74	-0.54	-0.69	-0.87	Kidney	Intestine			

Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)												First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain				
2674772	-1.43	-0.86	-1.33	-1.24	-0.78	2.41	-1.31	1.44	4.20	-0.20	-1.07	-1.47	Kidney	Intestine		
1376121	-0.67	-0.73	-1.03	-0.76	0.18	-0.67	1.83	-0.48	2.23	-0.35	-0.20	-0.38	Kidney	Lung		
831794	-0.02	0.67	-0.84	-1.00	-0.57	-1.15	-0.74	1.60	2.54	-1.58	-1.11	0.00	Kidney	Liver		
1427681	-0.99	-0.27	-0.83	-0.35	-1.02	-1.17	-0.84	3.24	3.60	-0.82	-0.76	-1.18	Kidney	Liver		
2912830	-0.78	-0.54	-1.49	-0.22	-0.44	-1.18	-1.22	1.73	4.88	2.60	-1.00	-1.40	Kidney	Pancreas	Liver	
504786	-0.61	-0.63	-1.01	-1.17	0.64	-0.98	-0.83	-1.42	3.62	-1.02	-0.53	2.35	Kidney	Brain		
254081	0.09	0.27	-0.52	-0.14	-0.34	-1.10	-0.42	-0.28	-0.14	8.97	-0.41	-0.39	Pancreas			
1330674	0.41	0.21	-0.11	-0.48	-0.08	-0.65	-0.39	-0.50	-0.72	8.59	-0.37	-0.56	Pancreas			
2377834	-0.29	0.76	-0.06	-0.28	-0.50	-0.64	-0.33	-0.27	-0.96	10.28	-0.41	-0.81	Pancreas			
2075464	-0.26	0.32	-0.07	-0.44	1.22	-0.29	-0.49	-0.43	-0.92	8.25	-0.49	-0.81	Pancreas			
2383235	-0.29	0.71	0.43	-0.28	-0.24	-0.96	-0.08	-0.29	-0.99	9.28	-0.41	-0.81	Pancreas			
1285503	-0.61	0.09	-0.67	-0.49	0.07	1.10	0.64	-0.26	-0.60	3.83	-0.39	-0.67	Pancreas			
2383205	-0.31	0.50	-0.08	0.00	-0.25	-0.56	-0.26	-0.05	-0.91	9.32	-0.52	-0.78	Pancreas			
2015871	0.19	0.82	0.33	0.10	-0.36	-0.42	-0.50	-0.60	-0.80	7.12	-0.42	-0.66	Pancreas			
2374046	0.28	-0.45	-0.78	-0.81	-0.39	-0.16	0.00	-0.05	0.09	4.23	-0.24	0.16	Pancreas			
1709828	-0.76	-0.86	-0.64	0.79	0.48	0.45	0.61	-0.51	0.96	2.20	-0.50	-0.27	Pancreas			
2061119	0.20	0.87	1.11	1.32	-0.04	0.10	-0.76	-0.98	-0.08	1.71	-0.30	-0.79	Pancreas			
3665105	-0.37	-0.42	-0.90	-1.12	-0.49	-0.08	-0.36	-0.37	1.07	6.89	-0.25	-0.22	Pancreas			
2068983	-0.66	-0.30	-0.46	-0.30	0.04	0.52	-0.25	-0.29	-0.58	7.80	-0.16	-0.50	Pancreas			
2242648	0.29	0.33	0.13	0.04	-0.19	-0.09	-0.27	-0.47	-0.84	6.92	-0.65	-0.58	Pancreas			
885032	0.54	0.06	-0.23	-0.51	0.47	0.12	-0.72	-0.75	-0.86	6.19	-0.15	-0.28	Pancreas			
2383830	-0.68	1.29	0.17	0.31	-0.06	-0.50	0.26	-0.57	-1.01	9.31	-0.61	-1.45	Pancreas			
2085191	-0.20	-0.03	-0.51	-0.27	-0.33	0.85	-0.57	-0.49	-0.80	10.19	-0.79	-0.73	Pancreas			
2792982	-0.13	0.17	-0.12	-0.05	0.01	1.34	-0.86	-0.78	-1.13	9.48	-0.85	-0.82	Pancreas			
179929	2.09	-1.33	-1.13	-1.39	1.30	1.65	-0.73	0.02	0.80	2.70	-1.24	-1.81	Pancreas	Heart	Intestine	
2741788	-0.58	-1.06	0.59	1.65	0.66	1.10	-0.91	-0.65	-0.60	3.55	0.63	-0.49	Pancreas	Ovary		
2373608	-0.59	0.08	-0.08	-0.92	2.56	0.80	-0.75	-0.73	-0.86	7.14	-0.83	-0.85	Pancreas	Stomach		
2182095	-0.59	-0.32	-0.67	-1.35	2.23	4.43	-1.26	-1.39	-1.53	6.86	-0.94	-1.27	Pancreas	Intestine	Stomach	

Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)													First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain					
2923150	-1.16	-0.28	-0.82	-0.86	2.97	3.67	-1.15	-1.30	-1.11	10.01	-1.49	-1.67	Pancreas	Intestine	Stomach		
293495	0.10	-1.09	-1.56	0.18	0.39	-1.08	-0.07	3.75	-0.78	4.65	-1.12	-0.54	Pancreas	Liver			
4284270	-0.80	-0.21	-0.63	-0.91	-0.87	-0.83	-0.23	3.61	-0.55	4.01	-0.62	-0.40	Pancreas	Liver			
958923	-0.52	-0.65	-0.35	-0.26	-0.36	-0.52	-0.63	-0.29	2.14	2.73	-0.56	0.68	Pancreas	Kidney			
1921393	-1.28	-1.10	0.26	-1.09	3.15	-0.28	-1.00	-1.28	3.40	4.61	-0.48	-1.42	Pancreas	Kidney	Stomach		
1447866	-0.47	-0.31	-0.13	-0.44	0.57	0.28	0.17	-0.34	-0.36	-0.64	1.94	-0.84	Spleen				
1666737	-1.13	-0.49	-0.27	-0.94	0.30	0.36	1.03	-0.48	-0.17	-0.50	2.43	-1.08	Spleen				
586245	-0.37	-0.26	1.74	-0.23	-0.14	0.09	-0.35	0.16	-0.20	-1.44	2.61	-2.19	Spleen	Uterus			
194162	-1.15	-0.35	-1.05	-1.03	3.19	1.56	-0.52	-0.73	-1.03	-1.30	3.20	-1.64	Spleen	Stomach	Intestine		
243123	-0.53	-0.27	-0.54	-0.77	0.19	-0.20	-0.77	-0.31	-0.78	0.67	-0.44	3.56	Brain				
382416	0.42	0.52	0.69	0.69	-0.64	-0.94	-0.35	-0.78	-1.53	-0.72	-0.73	3.38	Brain				
1852659	0.05	-0.49	-0.49	-0.75	-0.73	-0.32	-0.15	-0.55	-0.83	-0.07	-0.51	3.88	Brain				
3220181	-0.53	-0.65	-0.38	0.05	-0.22	1.41	-0.78	-0.09	-0.18	0.05	-0.49	1.68	Brain				
1726307	-0.60	0.74	0.26	0.58	0.08	-0.49	-0.15	-0.85	-0.79	-0.88	-0.31	2.32	Brain				
1904244	-0.21	0.13	-0.32	0.26	-0.54	-0.25	-0.46	0.08	-0.32	0.13	-0.42	1.90	Brain				
2039955	-0.51	0.05	-0.36	-0.52	-0.42	-0.52	-0.45	-0.18	-0.43	-0.33	-0.29	3.14	Brain				
2675641	-0.29	-0.73	0.39	0.27	0.17	-0.20	-0.85	-0.83	-0.12	-0.56	0.35	2.39	Brain				
1412749	0.09	-0.46	-0.76	-1.07	0.03	0.03	-0.51	-0.31	-0.59	0.20	-0.25	2.77	Brain				
1963854	-0.61	-0.87	0.23	-0.10	0.23	0.91	-0.74	-0.85	0.55	-0.84	-0.10	1.71	Brain				
2949085	0.16	-0.46	0.50	0.24	-0.19	-0.49	-0.12	-0.83	-0.34	-0.44	0.07	1.88	Brain				
2963196	0.18	0.29	-0.27	-0.49	0.12	-0.11	-0.70	-0.86	-1.03	-1.03	-0.63	3.46	Brain				
1505977	-0.21	-0.39	0.34	-0.48	-0.26	-0.83	-0.44	-0.05	-0.91	-0.20	-0.65	3.67	Brain				
1674985	0.46	-0.39	-0.25	-0.09	-0.59	-0.29	-0.38	-0.43	-0.01	-0.20	-0.23	1.93	Brain				
2109054	0.45	1.38	0.29	0.29	-0.56	-1.11	-0.70	-0.65	-0.18	-0.61	-0.90	2.00	Brain				
3317039	-0.49	0.01	-0.01	0.18	-0.01	-0.47	-0.66	-0.69	0.86	-0.37	-0.77	2.27	Brain				
2838551	-0.09	-0.22	0.00	-0.25	-0.25	-0.30	-0.31	-0.36	-0.02	0.29	-0.31	1.77	Brain				
1477568	0.65	-0.04	-0.22	-0.82	-0.13	-0.66	-0.49	-1.28	-0.04	-0.98	-0.30	3.00	Brain				
2963871	-0.25	-0.32	0.87	0.29	0.03	0.14	0.12	-1.14	-0.50	-0.47	-0.41	1.82	Brain				



Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)													First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain					
1740547	-0.31	-0.49	-0.44	-0.60	-0.22	-0.21	-0.28	-0.64	-0.66	-0.47	0.24	3.15	Brain				
2292011	0.10	-0.24	-0.09	-0.75	-0.13	-0.68	-0.37	-0.39	-0.80	-0.80	-0.64	3.68	Brain				
1349484	-0.29	0.22	0.21	x	-0.41	-0.37	-0.12	-0.37	-0.60	x	-0.04	1.71	Brain				
1674253	-0.51	-0.28	-0.80	-0.52	-0.56	-0.43	1.02	-0.67	0.57	-0.52	-0.14	1.70	Brain				
1932189	0.07	-0.50	-0.99	-1.17	-0.14	-0.30	-0.64	-0.80	-0.69	-0.30	0.13	3.97	Brain				
1403041	0.36	0.45	0.53	-0.34	-0.17	-0.41	-0.67	-0.81	-0.86	-0.55	-0.67	2.66	Brain				
1486358	0.28	-0.50	-0.01	0.33	-0.05	-0.23	-0.17	-1.00	-0.17	-1.16	-0.92	3.03	Brain				
1439065	0.13	-0.37	-0.58	x	-0.30	-0.17	-0.13	-0.06	-0.53	x	0.04	1.68	Brain				
530629	-0.42	0.15	-0.39	x	-0.47	-0.19	-0.34	-0.36	-0.74	x	-0.20	2.68	Brain				
1672676	-0.06	-0.47	0.32	0.21	-0.36	-0.42	-0.51	-0.95	-0.71	-0.68	-0.30	3.59	Brain				
1989129	-0.39	-0.44	0.26	0.00	0.10	-0.03	-0.33	-1.18	0.11	-1.00	-0.60	2.95	Brain				
1486348	-1.03	0.33	0.41	0.41	-0.34	-0.33	-0.53	-0.93	-1.14	-0.20	-0.20	3.71	Brain				
1397294	-0.53	0.01	-0.30	-0.89	-0.04	-0.54	0.13	-0.66	-0.89	-0.78	0.51	2.75	Brain				
2844322	0.11	-0.22	0.46	-0.02	-0.36	-0.55	-0.16	-0.88	-1.15	-0.75	-0.61	3.64	Brain				
1481440	-0.62	0.26	-0.25	0.67	-0.52	-0.44	-0.34	-0.43	-0.72	-0.33	-0.14	2.82	Brain				
26459	0.60	-0.56	-0.83	-0.84	-0.30	-0.67	-0.20	-0.15	-0.31	-0.34	-0.05	2.49	Brain				
1406786	-0.47	0.48	0.25	0.19	-0.07	-0.48	-0.05	-0.66	-0.47	-0.92	-0.36	2.14	Brain				
1485846	-0.37	-0.40	0.01	-0.38	-0.49	-0.04	-1.26	-1.03	-1.58	-1.04	-1.11	6.58	Brain				
2153242	-0.65	-0.37	-0.68	-0.90	-0.31	0.16	-0.29	-0.41	-0.75	-0.23	-0.03	3.38	Brain				
2157981	-0.35	-0.53	-0.45	-0.24	-0.20	-0.73	-0.68	-0.60	0.77	0.07	-0.62	3.23	Brain				
3244361	-0.47	-0.04	-0.23	-0.55	-0.36	-0.54	-0.64	1.42	-0.66	-0.14	-0.60	2.16	Brain				
1986737	-0.10	1.12	-0.16	-1.11	-1.01	-0.57	-0.59	-1.10	-0.04	-0.91	0.10	2.63	Brain				
2506867	-0.67	0.12	0.21	1.14	-0.88	-0.18	-0.91	-1.40	0.71	-0.86	-1.37	4.06	Brain				
1211682	1.89	-0.92	-0.91	-0.22	-0.43	0.47	-1.04	-0.37	-1.24	-1.54	-0.50	3.18	Brain	Heart			
1416354	1.96	-0.66	-0.27	-0.78	-0.93	-0.46	-0.39	-0.60	-0.77	-0.61	0.01	2.16	Brain	Heart			
2963962	1.40	-0.36	1.60	0.14	-0.23	-0.29	-0.80	-0.70	-1.15	-0.55	-0.66	1.78	Brain	Uterus			
1761086	0.70	0.98	-1.19	-1.49	0.57	1.61	-1.03	-1.05	-0.55	-1.04	-1.17	1.77	Brain	Intestine			
2588552	-0.84	0.98	-1.45	-1.33	-0.23	-1.10	1.97	-0.61	-0.82	-0.15	-0.75	2.78	Brain	Lung			

Table 5

Clone ID	Mean(tissue)-Mean(Entire Set)												First	Second	Third	Fourth
	Heart	Sk Muscle	Uterus	Ovary	Stomach	Intestine	Lung	Liver	Kidney	Pancreas	Spleen	Brain				
1901271	-1.09	-1.96	-1.10	-0.34	-0.51	0.86	-0.30	1.52	0.41	-0.87	0.30	1.73	Brain	Liver		
1740924	-0.04	-0.43	-0.84	-0.64	-0.23	-0.52	-0.51	1.67	-0.80	-0.23	-0.26	1.90	Brain	Liver		
1480159	-0.86	-0.07	-0.82	-0.86	-0.79	-0.52	-0.59	-0.38	0.50	2.34	-0.05	2.55	Brain	Pancreas		

What is claimed is:

1. A plurality of cell and tissue specific polynucleotides selected from SEQ ID NOs:1-416 or the complement thereof.

5 2. A subset of the polynucleotides of claim 1, wherein the subset is selected from at least one of the groups consisting of

- a) SEQ ID NOs:209-218 and 1-10, cell specific polynucleotides of heart and fragments thereof,
- b) SEQ ID NOs:219-249 and 11-41, cell specific polynucleotides of skeletal muscle and  
10 fragments thereof;
- c) SEQ ID NOs:250-251 and 42-43, cell specific polynucleotides of uterus and fragments thereof;
- d) SEQ ID NOs:252-256 and 44-48, cell specific polynucleotides of ovary and fragments thereof;
- 15 e) SEQ ID NOs:257-263 and 49-55, cell specific polynucleotides of stomach and fragments thereof;
- f) SEQ ID NOs:264-283 and 56-75, cell specific polynucleotides of intestine and fragments thereof;
- g) SEQ ID NOs:284-293 and 76-85, cell specific polynucleotides of lung and fragments  
20 thereof;
- h) SEQ ID NOs:294-345 and 86-137, cell specific polynucleotides of liver and fragments thereof;
- i) SEQ ID NOs:346-356 and 138-148, cell specific polynucleotides of kidney and fragments thereof;
- 25 j) SEQ ID NOs:357-374 and 149-166, cell specific polynucleotides of pancreas and fragments thereof; and
- k) SEQ ID NOs:375-416 and 167-208, cell specific polynucleotides of brain and fragments thereof.

2. The composition of claim 1, wherein the polynucleotides are immobilized on a substrate.

30 3. A high throughput method for detecting expression of a polynucleotide in a sample, the method comprising:

- a) hybridizing the polynucleotides of claim 1 with the nucleic acids of the sample under condition to form a hybridization complex; and
- b) detecting the hybridization complex, wherein the presence of hybridization complex  
35 indicates expression of the polynucleotide in the sample.

4. The method of claim 3 wherein the nucleic acids of the sample are amplified prior to

hybridization.

5        5. The method of claim 3 wherein hybridization complex formation indicates the differentiation of embryonic stem cells into a tissue selected from the group consisting of brain, heart, kidney, liver, lung, muscle or pancreatic tissues.

6. A high throughput method of screening molecules or compounds to identify a ligand, the method comprising:

      a) combining the polynucleotides of claim 1 with molecules or compounds under conditions to allow specific binding; and

      b) detecting specific binding, thereby identifying a ligand which specifically binds to the  
10 composition.

7. The method of claim 6 wherein the molecules or compounds are selected from DNA molecules, RNA molecules, peptide nucleic acids, mimetics, peptides, and proteins.

8. An isolated polynucleotide selected from SEQ ID NOs:212, 228, 233, 259, 271, 287, 316-319, 324, 370, 379, 380, 383, 410, and 412 or a fragment thereof.

15        9. The polynucleotides of claim 8 wherein the fragments are SEQ ID NOs:4, 20, 25, 51, 63, 79, 108-111, 116, 162, 171, 172, 175, 202, and 204, respectively.

      10. An expression vector containing a polynucleotide of claim 8.

      11. A host cell containing the expression vector of claim 10

      12. A method for producing a protein, the method comprising the steps of:

20        (a) culturing the host cell of claim 11 under conditions for the expression of protein; and

      (b) recovering the protein from the host cell culture.

      13. A protein produced by the method of claim 12.

      14. A high-throughput method for screening a library of molecules or compounds to identify at least one ligand which specifically binds a protein, the method comprising:

25        (a) combining the protein of claim 13 with the library under conditions to allow specific binding; and

      (b) detecting specific binding between the protein and a molecule or compound, thereby identifying a ligand which specifically binds the protein.

30        15. The method of claim 14 wherein the library is selected from DNA molecules, RNA molecules, peptide nucleic acids, mimetics, peptides, proteins, agonists, antagonists, antibodies or their fragments, immunoglobulins, inhibitors, drug compounds, and pharmaceutical agents.

      16. A method of purifying a ligand from a sample, the method comprising:

      a) combining the protein of claim 13 with a sample under conditions to allow specific binding;

35        b) recovering the bound protein; and

      c) separating the protein from the ligand, thereby obtaining purified ligand.

17. A composition comprising the protein of claim 13 in conjunction with a pharmaceutical carrier.
18. A purified antibody that specifically binds to the protein of claim 13.

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